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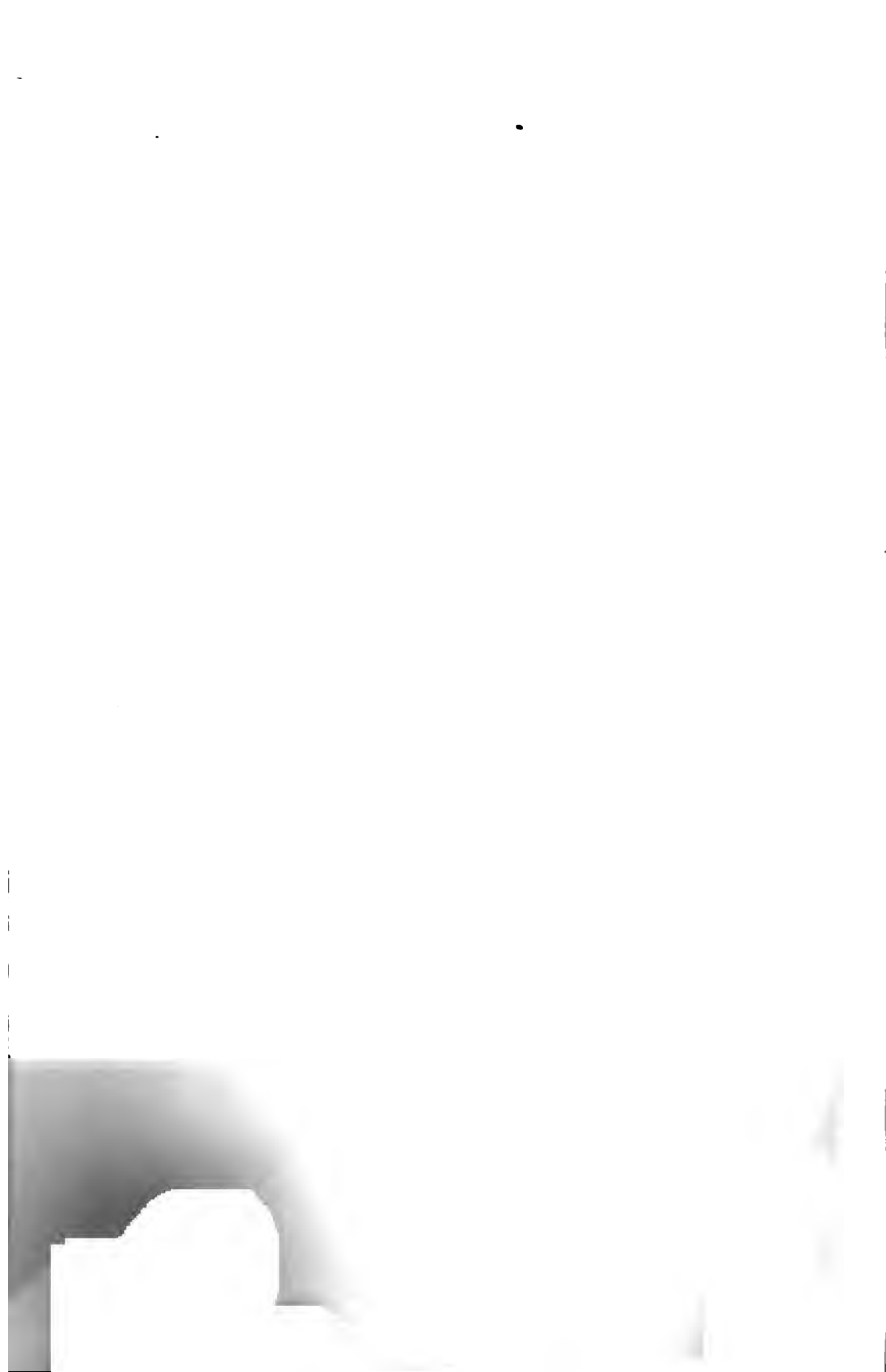
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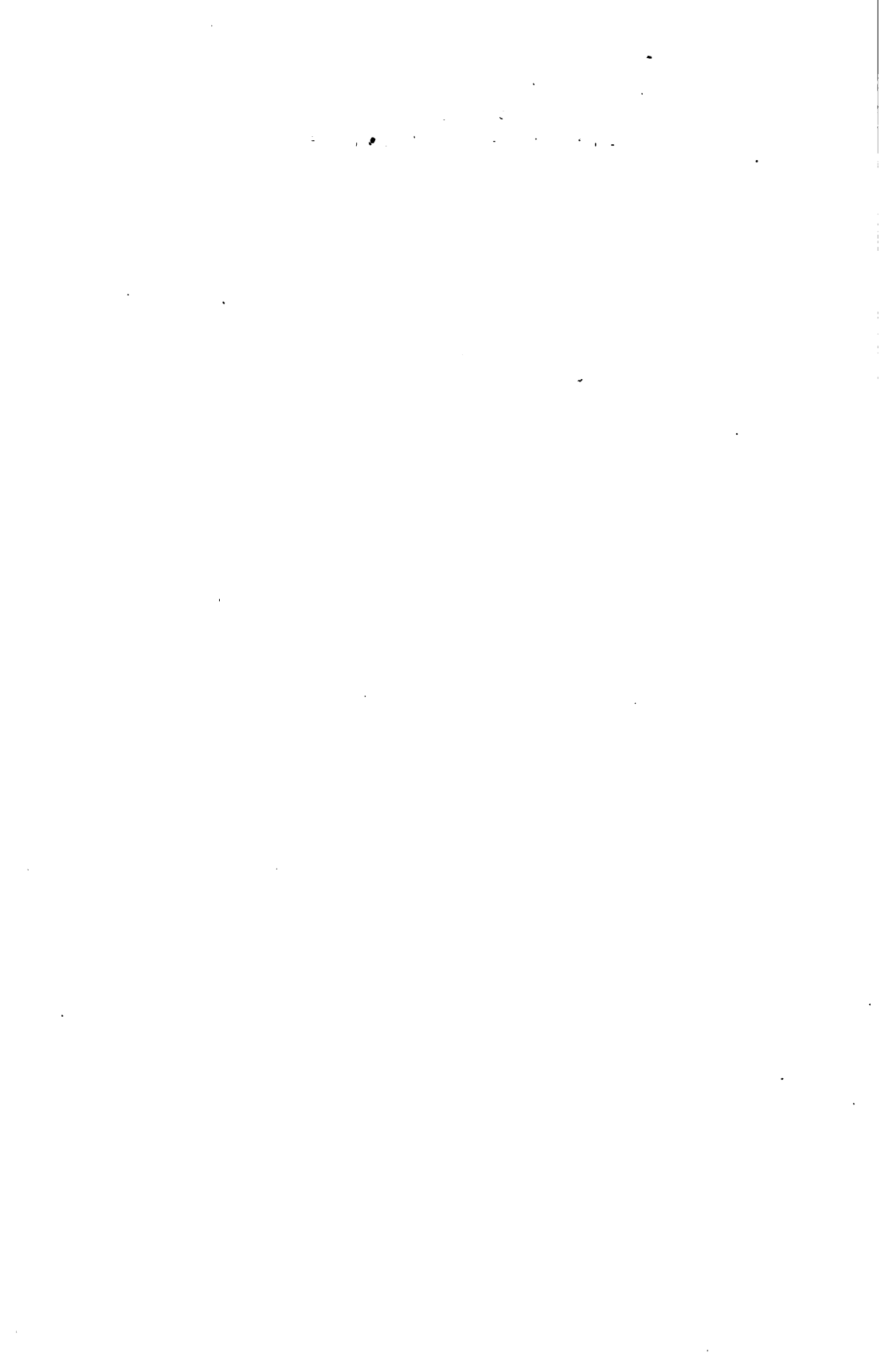
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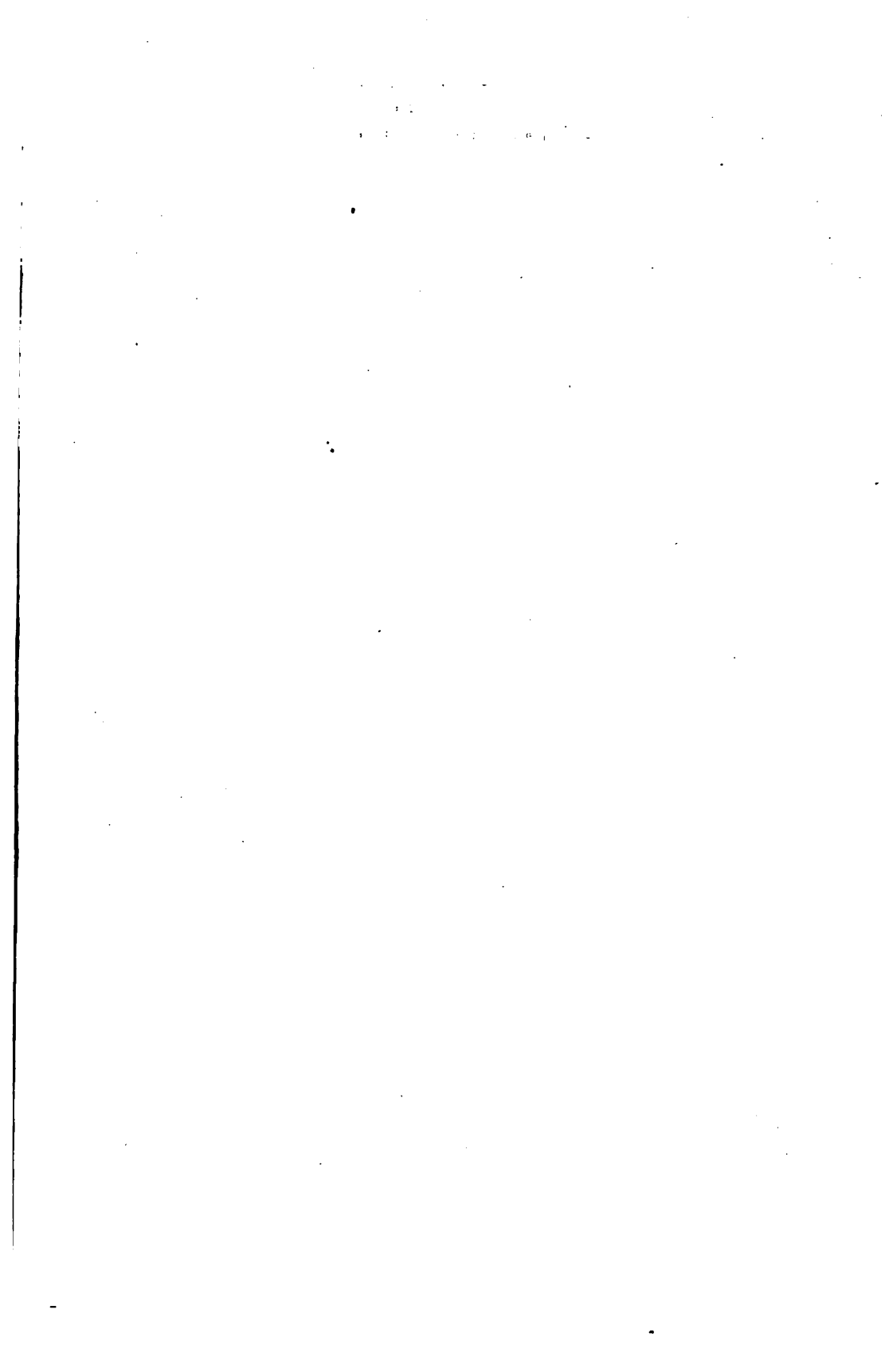
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FROM

THE BOSTON TRANSIT COMMISSION,
15 Beacon Street.

GEORGE G. CROCKER, *Chairman.*

GEORGE F. SWAIN,
HORACE G. ALLEN,

EDMUND S. DAVIS,
Chief Engineer.

JOSIAH QUINCY,
JAMES B. NOYES,
Commissioners.

B. LEIGHTON BEAL,
Secretary.

EIGHTEENTH ANNUAL REPORT

OF THE

BOSTON TRANSIT COMMISSION,

FOR THE YEAR ENDING

JUNE 30, 1912.



CITY OF BOSTON
PRINTING DEPARTMENT

1912

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HARVARD UNIVERSITY
SCHOOL OF
LANDSCAPE ARCHITECTURE

1913



1912

BOSTON TRANSIT COMMISSION.

15 BEACON STREET, BOSTON, June 30, 1912.

TO THE CITY COUNCIL OF THE CITY OF BOSTON:

In compliance with Statutes of 1894, chapter 548, section 24, the report of the Boston Transit Commission for the year ending June 30, 1912, is respectfully submitted.

THE CAMBRIDGE CONNECTION.

The Cambridge Connection was opened to the public on March 23, 1912. On March 11, upon the invitation of the Commission and the Boston Elevated Railway Company, it was inspected by officials representing the state, the cities of Boston, Cambridge and Somerville, and the towns of Arlington, Belmont and Watertown.

Statistics in relation to the Cambridge Connection and the Cambridge Main Street Subway will be found in Appendix A.

Stairway Coverings.

In July, 1911, C. Howard Walker, Architect, was consulted as to the stairway coverings for the entrances and exits on the easterly side of Tremont street, and on August 15 Mr. Walker's plans were approved.

In May, 1912, the following correspondence took place between His Honor the Mayor and the Commission in regard to these coverings:

CITY OF BOSTON
OFFICE OF THE MAYOR

May 2, 1912.

RAPID TRANSIT COMMISSION,
15 Beacon street, Boston, Mass.

GENTLEMEN:

I find that there has been considerable criticism of the subway stations on Tremont street which provide exits and entrances for the Cambridge connection. These structures are, I should judge, about twelve feet high and not only have the effect of contracting the sidewalk area at this point but offer a considerable obstruction to the view, and in general are more conspicuous than would seem to be necessary.

The corresponding structures in Central Square are made of a polished granite, rising not more than four feet above the sidewalk, and are extremely inconspicuous. I would suggest that unless you know of some advantages in the type of station constructed by you on Tremont street you modify them so as to reduce the height and thus bring them into a more subordinate relation to the adjacent buildings. At present they are, in the opinion of many good judges, all out of proportion, and a positive detriment to the business of that section of the city.

Yours very truly,

(Signed) JOHN F. FITZGERALD
Mayor.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, May 9, 1912.

HON. JOHN F. FITZGERALD, *Mayor.*

DEAR SIR:

Your letter of the 2nd inst., relating to the subway entrances on the east side of Tremont street, has been received and considered by the Commission.

You state that "there has been considerable criticism" of these entrances. No criticism of them since their erection has been made to this Commission, but the Commission has no doubt that they have been criticised by some persons, and it is sure that your own experience will lead you to agree that whatever the acts of a public board or official may be, whether right or wrong, and whether founded on adequate reasons or not, criticism cannot be escaped.

In the present case there were good reasons for constructing the entrances in their present form, and the Commission is glad to take this opportunity of placing these reasons before you in order that you may thoroughly understand the situation.

You are aware that in order to render possible the extension of the Cambridge Connection to the South station and Dorchester it was necessary to carry it under the Park street station, and on account of the depth below the surface of the street it was considered desirable for the public convenience to instal inclined elevators,—one connecting with each unloading platform.

These inclined elevators were placed beneath the usual stairways and as close to them as practicable. The result was that there were two openings on the surface of the sidewalk on each side of Winter street, one for the elevator and the other for the stairway.

These openings had to be covered, either entirely or partially. The Commission was well aware of the fact that some subway entrances in other cities were only partially covered. Even if this is a proper construction for a stairway of the ordinary kind, it would not be a proper form for the covering of an inclined elevator. Such an elevator must be entirely covered in order that the machinery and moving parts shall not be exposed to the weather.

The requirements of the problem were therefore these:

The size of the openings on the sidewalk both as to length and width were fixed, and it was necessary to entirely cover the openings over the elevators.

The only variable elements in the problem were the height of the coverings and whether they should be level on the top or should be sloped off in the form of a hood. The Commission might have covered each opening with a separate structure, making the one over the elevator higher than the one over the stairway, the latter being only partially covered, but such a form of construction would not appeal to you or to the public as either ornamental or desirable. The coverings might have been of the hood shape, but structures of this kind, including some which have been built by this Commission, have not escaped criticism.

After thorough study, and consultation with a prominent and experienced architect of high standing, the Commission decided to cover both openings by a continuous roof with a level cornice, making the height as small as possible. The height at the lowest end is 8 feet 1½ inches in the clear above the sidewalk, which can certainly not be regarded as excessive.

Owing to the fact that the street is not level, the height of the covering is greater at one end than at the other. To have sloped the roof so as to be parallel with the grade of the street would not have been architecturally desirable.

With reference to the desirability of covering the stairways only partially,—climate, location and the amount of traffic, as well as the presence or absence of elevators, all affect this question. The stairway which is entirely covered is certainly much more convenient for the public, especially in stormy or icy weather.

The Commission has sometimes been asked why it did not place these entrances in private property, and we would therefore call your attention to the fact that the act under which the Cambridge Connection was built provides for a tunnel "between the Park street subway station and a point between Pinckney and Cambridge streets . . . with suitable appurtenances and terminals." The act did not definitely authorize the taking of private property on the easterly side of Tremont street, and it would moreover have been somewhat difficult to arrange stairways and elevators under such conditions. The act also prohibited the erection of any structures on the Common.

To summarize then —

1. The length and width of the openings on the sidewalk were fixed.
2. The inclined elevators had to be completely covered.
3. The height of the coverings was made as small as possible.
4. Each opening might have been covered by a separate structure, these structures being of different heights or hoodshaped, but the partially covered stairway and the hood form were not considered desirable under the circumstances. •

By order of the

BOSTON TRANSIT COMMISSION,

(Signed) B. LEIGHTON BEAL.

Secretary.

Real Estate Takings.

Satisfactory progress has been made in effecting settlements for easements taken on account of the Cambridge Connection. There remain unsettled only a few claims of importance.

THE WASHINGTON STREET TUNNEL.

Suits for damages on account of easements taken for the Washington street tunnel are still pending in the cases of the following estates:

Nos. 710-724 Washington street,
732 Washington street,
235-239 Washington street,
241 Washington street,
92-98 Union street.

The claim for damages to the estates Nos. 758 to 764 Washington street was sent to an auditor. His finding has been accepted and the amount paid.

In the case of the Old South Association *vs.* Boston after the verdict for the petitioner for \$100,000., being the amount awarded by the Commission, the case went to the Supreme Judicial Court upon the question of law as to whether, in estimating the damages, the jury should consider the fact that the petitioner's premises were not subject to taxation. The Justice presiding at the trial ruled that this was not to be considered by the jury and the parties agreed that if this was error an additional sum of \$25,000. should be paid to the petitioner. The Supreme Judicial Court decided that the fact should have been considered by the jury, and the petitioner was accordingly paid the sum agreed upon, and interest in addition to the amount of the verdict.

The estate Nos. 12-18 LaGrange street and that at the southwest corner of Washington and Winter streets, which were taken by the Commission for the city in entirety are now for sale subject to the requisite tunnel easements. An option for the purchase of the latter estate was granted in December last but was not taken up.

TREMONT STREET SUBWAY.

As the result of a fatal accident at the Park street station of the Tremont street subway December 27, 1911, the following correspondence took place:

CITY OF BOSTON
OFFICE OF THE MAYOR

December 28, 1911.

BOSTON TRANSIT COMMISSION,
15 Beacon Street, Boston, Mass.

DEAR SIR:

I have read in the morning newspapers of the death of a citizen, Daniel J. Kelley, who was caught between a moving car and a

station platform last night at 6:30 o'clock in the southbound station of the Park street subway. The cause of this accident has not yet been determined but it brings up acutely the question which has been before the public for some time — the necessity of insuring a higher degree of safety for the public which uses this station. It is expected that by the early spring the Cambridge connection will be opened and this means a considerable influx of passengers either leaving the new tunnel or passing into it from Park street. As the platforms are over-crowded now they will be wholly inadequate to accommodate the throngs which may be expected to use them by the middle of the summer.

Various remedies have been proposed for this condition. It has been suggested that the platform might be lengthened in the direction of Boylston street; that a railing of some sort might be constructed along the edge at the car stops; that a penalty should be imposed upon persons who jostle in the crowd or who jump on moving cars; that the special police should be given more effective control of the situation than they now possess.

Whether any or all of these suggestions are practicable, there is no doubt that the present situation is fraught with danger and that either some structural change should be made or the existing laws and rules of the company strengthened so that accidents similar to that which befell the victim last evening may not recur.

I submit this problem to the consideration of your commission, and beg to assure you that any solution which you may be able to suggest will meet with the hearty cooperation of the city authorities.

Yours respectfully,

(Signed) JOHN F. FITZGERALD
Mayor.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, January 4, 1912.

To His Honor the Mayor John F. Fitzgerald.

DEAR SIR:

Your letter of December 28th relating to a fatal accident at the platform of the Park street station of the Tremont street subway for southbound cars has been laid before and considered by the Commission.

On investigation we find that this accident was the result of an attempt to board a moving car. It could have occurred equally well in any street or square of the city no matter how wide the street or large the square. The accident was not due to crowding, because at the time the platform was not crowded. In fact, had the platform been crowded, this particular accident would have been less likely to happen because the possibility of reaching the moving car by running would have been less obvious. At the point where the accident happened the height of the platform above the rail is 13 inches. On the one hand, this made it easier for the victim to board the car without losing his balance, and, on the other, it may have contributed to a fatal result.

The Park street station of the Tremont street subway occupies in width under the Common as much space as the law authorizing its construction

permitted. The length of the platforms was limited by a desire to avoid injury to a line of old elms, supposed at the time of its construction to be in good condition, but shortly thereafter discovered to have been so rotted by age that safety required their removal. The platforms are not so large as they would have been made had it not been for these limitations.

In the fifth report of this Commission, dated August 15, 1899, on page 8, the following statement in relation to the Park street station is made:

"The subway act of 1894 imposed such stringent limitations as to encroachment upon the Common and upon Tremont street that in the following year the Commission was forced to ask that the boundaries which had been fixed should be enlarged. It was a question whether the Legislature would not prefer to repeal the act, and a bill for that purpose was passed to a third reading in the House of Representatives. Finally a slight enlargement of the boundaries was granted, but only upon the positive assurance that none of the old elms between West street and the south line of St. Paul's Church should be disturbed. Within these limitations the Commission, in planning the Park-street station, used every available inch of space."

While the platforms at the hours of greatest traffic have been crowded to the point of discomfort, the record of their use shows that the passengers have experienced there a very high measure of safety. Since the opening of the subway on September 1, 1897, the two platforms of the Park street station have been used by passengers either entering or leaving the station or transferring from one car to another at that point, to the number of at least 400,000,000. In this period of 14 years three other fatal accidents to passengers have happened. Two of these, like the accident last week, were due to unwise attempts to board moving cars. The only serious accident which, in these 14 years, has occurred at that station in connection with car movements, and which has not been due to the fault of the victim, happened nearly 12 years ago. That was the case of a woman who, by some person or persons behind her, was pushed off the platform in front of a moving car.

This is a notable record.

This Commission does not share your opinion that the opening of the Cambridge Connection will increase the load on the platforms in question. It believes on the contrary that the present congestion will be relieved, for the reason that most of the present traffic between Cambridge and Park street over Harvard bridge will then be transferred to the new line, and, to a large extent, will make use of the new entrances and exits on the east side of Tremont street.

The Commission, however, agrees with you that an enlargement of these platforms will conduce to the comfort and convenience of passengers.

A Joint Board, consisting of the Board of Railroad Commissioners and the Boston Transit Commission, in a report made to the Legislature last year, suggested that such enlargement could be executed advantageously in connection with the new tunnel construction then under way or in contemplation, and, pursuant to this suggestion, the Legislature authorized the making of alterations for that purpose. (Statutes 1911, Chapter 741, Sections 1 and 5.)

This legislation did not become effective until the seventh day of December last. The authority given by it is limited but it is hoped that it will prove to be sufficient.

BOSTON TRANSIT COMMISSION.

By (Signed) GEORGE G. CROCKER
Chairman.

NEW SUBWAYS AND TUNNELS.

At the date of the last report legislation was pending for the construction of additional tunnels and subways in the city of Boston and also for a consolidation and rearrangement of the various transit loans. The act embodying these matters was approved July 20, 1911. It is chapter 741 of the acts of that year and is entitled "An act relative to electric railway transportation facilities in the city of Boston and its vicinity." A copy of the act will be found in Appendix B.

The act provides for the construction of a tunnel, called the Dorchester tunnel, from the Park street station of the Cambridge Connection, through various streets and squares, to a point at or near Andrew square in Dorchester, of a subway, called the Boylston Street subway, from a point at or near the junction of Commonwealth avenue and Beacon street; thence in and under certain ways and lands to a point at or near the Park street station of the Tremont street subway, and of an extension of the East Boston tunnel, called the East Boston tunnel extension, from its present terminus in Court street to a suitable connection with surface tracks in Cambridge street at a point at or near Lynde street, or at or near North Russell street or between the two said streets, and it repealed so much of previous legislation as authorized the construction of the Riverbank subway. See section 8.

The act required the Commission to make preliminary investigations, surveys, etc., immediately upon its passage. See section 14.

The taking effect of the remainder of the act was based upon the following conditions:

The agreement of the Boston Elevated Railway Company and the West End Street Railway Company to the terms of chapter 740 of the acts of the year 1911, providing for the sale of the property, privileges and franchises of the latter to the former company, and the acceptance of the terms of chapter 741 by vote of the City Council of the city of Boston, approved

by the Mayor, and by the Boston Elevated Railway Company, by vote of its board of directors, all within fifteen days of the action, as noted above, of the Boston Elevated Railway Company and the West End Street Railway Company. The affirmative action on chapter 740 by the Boston Elevated Railway Company took place on August 24, and by the West End Street Railway Company on September 6. Chapter 741 was accepted by the Boston Elevated Railway Company on September 13, and by the City Council of Boston on September 18, approved by the Mayor on September 21, and such acceptances were evidenced by certificates filed with the Secretary of the Commonwealth.

The act also provides that within ninety days after it takes full effect the Commission shall execute contracts with the Boston Elevated Railway Company for the use of the new tunnels and subways provided for therein, and for the use of the Cambridge Connection, so-called, and shall also execute extensions, with readjustments of terms and conditions, of the existing contracts for the use of the Tremont street subway, the East Boston tunnel and the Washington street tunnel. These new leases and extensions of leases were duly executed December 7, 1911, by the city of Boston, acting by the Boston Transit Commission, and by the Boston Elevated Railway Company, and will be found in Appendix C.

On July 25, 1911, the Chief Engineer was "instructed to proceed immediately to make all such preliminary investigations, surveys, plans, excavations and borings as may be required for the design and construction of the Dorchester tunnel, the Boylston Street subway and the East Boston tunnel extension, under the provisions of chapter 741, acts of 1911."

THE BOYLSTON STREET SUBWAY.

One of the first determinations to be made in relation to the Boylston Street subway was the location of its westerly terminal. After public hearings, at which many parties interested appeared, the location of the westerly end of the incline was, on December 21, 1911, fixed in Commonwealth avenue at the easterly line of Kenmore street, and it was further voted that the maximum grade should not exceed five per cent.

On December 21, 1911, the Chief Engineer was authorized to consult an architect with a view to such treatment of the

incline as would best comport with the surroundings on the avenue. Much time has been given to the consideration of this question, models have been made, and on June 28, 1912, it was voted that the incline should be covered to a point 230 feet easterly from Kenmore street.

Construction Contracts.

On March 12, 1912, bids were opened for the construction of Section 1, from Kenmore street to Massachusetts avenue, and the contract was awarded to the Hugh Nawn Contracting Company, the lowest bidder.

On May 7, bids were opened for the construction of Section 3, under Boylston street from Hereford street to about 230 feet east of Exeter street, and the contract was awarded to the same contractor, the lowest bidder by about \$60,000.

Section 2 lies between Sections 1 and 3 and includes the Massachusetts avenue station. After consultation with the contractor for Sections 1 and 3, it was, on June 6, voted to extend these two contracts so as to include Section 2, a portion of the station being constructed under the unit prices in the contract for Section 1 and the remainder under the unit prices for Section 3. Work has not yet begun on Section 2, but rapid progress is being made on Sections 1 and 3.

Stations.

The act provided for four stations, namely, at Massachusetts avenue, at Copley square, at or near the corner of Boylston and Tremont streets, and at or near Park street.

The Massachusetts avenue station. This station has been located in the premises at the southeast corner of Massachusetts avenue and Newbury street, and much consideration has been given to the determination of its proper lay-out.

On June 15, the plan was adopted which accompanies the report of the Chief Engineer, and construction plans therefor are being prepared.

The Copley square station. Several conferences with His Honor the Mayor and others have been held and many studies made, the aim of which has been to avoid placing in the square any entrance or exit structures which might conflict with the best possible future improvement of this important open space. On April 16, the Commission "voted that the stations, exits

and entrances of the Boylston Street subway be so located and planned that no structures be erected above the street grade within that part of Copley square lying between the westerly line of Clarendon street and the easterly line of Dartmouth street, and south of the building line on the northerly side of Boylston street." Details of the station at this locality are still under consideration.

A design for an entrance and exit on the south side of Boylston street near Dartmouth street has been drawn for the Commission by the architects of the Library building and has been approved by the Trustees of the Public Library.

The portion east of Copley square. Many suggestions and studies have been made relating to the alignment, grades and plan of the Boylston Street subway easterly of Copley square, — especially with reference to its relation to the existing subway under the Common along Boylston and Tremont streets. No determination thereon has been reached at the date of this report.

The Tremont street portion, including the terminal station at Park street, presents many difficult problems.

THE DORCHESTER TUNNEL.

May 9 a location plan for the Dorchester tunnel was approved for filing with the Commissioner of Public Works. The act requires the filing of such a plan before any work of construction can be begun. Such location plan can be amended at any time by a new one similarly approved and filed.

Bids for the construction of Section A, being for that part under Winter street between Tremont and Washington streets, were opened May 23. The contract was awarded to the Coughlan & Sheils Co., the lowest bidder. With a view to causing the least possible inconvenience in this busy street, the work is to be done largely at night, and is to be pushed forward so as to leave a free street for Christmas business.

Owing to the depth of the tunnel below the surface the front walls of all the buildings abutting on the street, except those at the corner of Washington street, must be underpinned.

As it was thought that some of the owners, contemplating reconstruction, might desire heavier foundations than are necessary to support the present buildings, the Commission made arrangements with the contractor so that any owner

can, if he wishes, have such heavier work put in at the present time at the favorable unit prices named in the underpinning contract.

At the date of this report no one has availed of the opportunity.

EAST BOSTON TUNNEL EXTENSION.

Various studies for the East Boston tunnel extension have been considered.

Questions relating to the plan of the sub-substation at Scollay square and its connections with the existing station and the surface and also relating to the location of loops or switchbacks for turning back cars from East Boston or Cambridge, respectively, have received extended consideration.

SIDEWALK CONGESTION.

CITY OF BOSTON
OFFICE OF THE MAYOR

November 24, 1911.

RAPID TRANSIT COMMISSION,
15 Beacon street, Boston, Mass.

GENTLEMEN:

The congestion of traffic in the business section of Boston has brought about a condition which, in the crowded hours of the day, amounts virtually to a blockade. With the holiday season upon us, when pedestrians are forced into the middle of the streets and over the car tracks and even then are able to make little headway through the intermingling throngs, it has seemed to me that responsible officials should put their wits together in an effort to find a solution for conditions that are rapidly becoming intolerable.

I would ask the Rapid Transit Commission, therefore, to interpret broadly its powers under the acts of the Legislature and to utilize its admirable resources for the study of this question. In particular, I would ask your Commission to consider the suggestion of sub-sidewalks in the main arteries of travel down town, such as Washington and Tremont streets between Boylston and School streets, West, Bromfield, School and Winter streets, and Temple place. The congestion here is a sidewalk congestion as the heavy teaming does not take these routes and a considerable portion of the car service has been diverted to the subway and the tunnel. Unless there are engineering obstacles the sub-sidewalk would seem to be the cheapest and most effective remedy that has been proposed. It consists of a passageway from eight to ten feet below the surface walk, with entrances leading from it into the stores at one side and stairways to the surface at moderate intervals. The plan does not involve any legal difficulty, as the use of this space for cellars or areaways is merely a revocable easement, subject to the right of the city to enter and resume control of the space for public purposes. Nor, as I understand it, is the city obliged to award compensation to the owners dispossessed.

I suggest that your Commission confer with the Street Commissioners

and, in so far as it may properly do so, apply itself to this problem, which is as pressing as any that has engaged the attention of the municipal authorities and civic organizations in recent years.

Yours very truly,

(Signed) JOHN F. FITZGERALD,
Mayor.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, November 28, 1911.

To His Honor the Mayor, John F. Fitzgerald.

DEAR SIR:—

Your letter to this Commission under date of November twenty-fourth has been received.

The matter to which you refer has been under consideration in a general way by the members of this Commission ever since its organization, but the acts of the legislature, under authority of which the several subways and tunnels have been built, have not permitted the construction of any continuous sub-sidewalks in connection therewith.

Shortly after the passage of chapter 741 of the acts of the present year, the question was raised in the Commission whether the special phraseology of this act might not properly be interpreted as authorizing the construction of a footway under Winter street connecting the Tremont street subway and the Washington street tunnel. Plans and a model of such a sub-footway between the top of the tunnel and the surface of the street have been prepared. Some two or three weeks ago the Corporation Counsel was consulted as to the powers of the Commission in the premises. The matter was also lately brought to the attention of the President and the Vice President of the Boston Elevated Railway Company.

The feasibility and usefulness of such a sub-footway can hardly be questioned, but it is too early as yet to state definitely that the authority given by the act is sufficient.

So far as Washington street is concerned the sub-sidewalk which you favor is not the only way and perhaps not the best way to deal with the existing congestion. The street is so narrow that the tunnel with its platforms, in all places nearly, and in some places completely, occupies the space within the street lines. Accordingly, continuous sub-sidewalks could not be built there without encroaching largely on private property and entailing very great expenditures for land damages and construction. On that street elevated sidewalks above the present sidewalks on each side of the street, in the nature of balconies or galleries, may well prove to be the better treatment. If desired, they could be extended out over the roadway beyond the line of the present sidewalks. Such elevated sidewalks would provide immediate access to the second stories of the buildings. At a height sufficient to clear the street traffic they should pass over all the side streets and be provided at intervals with cross-ways over Washington street. They would not cost nearly as much as sub-sidewalks. They would not involve the taking of private property or the great expense of altering and supporting foundations. They would, to be sure, darken the ground floors of the stores in the same way in which ground floor rooms

are darkened in an arcaded street, but in comparison it must be remembered that basement floors opening on a basement sidewalk would have the benefit of even less natural light.

In streets not now occupied, as is Washington street, by tunnel construction, a sub-sidewalk can be built without involving the expense of land takings, and in some cases may prove to be the more desirable treatment.

The Commission will be glad at your convenience to confer and co-operate with you and the Street Commissioners in relation to this important matter, but it begs you to remember that it never in the past has had, and, unless as noted above, it has not now, any state or city funds legally available to meet the cost of a suitable investigation and report on the various matters to which your letter refers.

By order of the Boston Transit Commission.

(Signed) GEORGE G. CROCKER
Chairman.

The Dorchester tunnel, being an extension of the line from Cambridge, is to pass under Winter and Summer streets, crossing underneath the Tremont street subway and the Washington street tunnel. At these crossings it is therefore in the second-story below the surface of the street.

The cheapest and the best way to build it is by the open cut and cover method rather than by tunneling. Winter

ERRATA.

Page 15.—In the paragraph beginning “The top of the tunnel”, for “6 or 7” in the first and second lines, read “twenty-one.”

width of the street could be used for a sub-sidewalk or foot-way connecting at one end with the ticket lobby of the Cambridge Connection under Tremont street and at the other with the lobbies of the Washington street tunnel. Such a sub-passage might be lined with show windows and have connections with the basements or sub-basements of the abutting buildings. If made attractive and useful it would increase the value of the several properties and at the same time relieve surface sidewalk congestion.

While the Commission has authority to fill this space or leave it open, as it may deem expedient, it does not consider that it has power to go to expense in fitting up the space for a sub-sidewalk. If this should seem desirable, additional legislative authorization will be needed.

and, in so far as it may properly do so, apply itself to this problem, which is as pressing as any that has engaged the attention of the municipal authorities and civic organizations in recent years.

Yours very truly,

(Signed) JOHN F. FITZGERALD,
Mayor.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, November 28, 1911.

To His Honor the Mayor, John F. Fitzgerald.

DEAR SIR:—

Your letter to this Commission under date of November twenty-fourth has been received.

The matter to which you refer has been under consideration in a general way by the members of this Commission ever since its organization, but the acts of the legislature, under authority of which the several subways and tunnels have been built, have not permitted the construction of any continuous sub-sidewalks in connection therewith.

Shortly after the passage of chapter 741 of the acts of the present year, the question was raised in the Commission whether the special phraseology of this act might not properly be interpreted as authorizing the construction of a footway under Winter street connecting the Tremont street subway and the Washington street tunnel. Plans and a model of such a sub-footway between the top of the tunnel and the surface of the street have been prepared. Some two or three weeks ago the Corporation Counsel was consulted as to the powers of the Commission in the premises. The matter was also lately brought to the attention of the President and the Vice President of the Boston Elevated Railway Company.

The feasibility and usefulness of such a sub-footway can hardly be questioned, but it is too early as yet to state definitely that the authority given by the act is sufficient.

So far as Washington street is concerned the sub-sidewalk which you favor is not the only way and perhaps not the best way to deal with the existing congestion. The street is so narrow that the tunnel with its platforms, in all places nearly, and in some places completely, occupies the space within the street lines. Accordingly, continuous sub-sidewalks could not be built there without encroaching largely on private property and entailing very great expenditures for land damages and construction. On that street elevated sidewalks above the present sidewalks on each side of the street, in the nature of balconies or galleries, may well prove to be the better treatment. If desired, they could be extended out over the roadway beyond the line of the present sidewalks. Such elevated sidewalks would provide immediate access to the second stories of the buildings. At a height sufficient to clear the street traffic they should pass over all the side streets and be provided at intervals with cross-ways over Washington street. They would not cost nearly as much as sub-sidewalks. They would not involve the taking of private property or the great expense of altering and supporting foundations. They would, to be sure, darken the ground floors of the stores in the same way in which ground floor rooms

are darkened in an arcaded street, but in comparison it must be remembered that basement floors opening on a basement sidewalk would have the benefit of even less natural light.

In streets not now occupied, as is Washington street, by tunnel construction, a sub-sidewalk can be built without involving the expense of land takings, and in some cases may prove to be the more desirable treatment.

The Commission will be glad at your convenience to confer and co-operate with you and the Street Commissioners in relation to this important matter, but it begs you to remember that it never in the past has had, and, unless as noted above, it has not now, any state or city funds legally available to meet the cost of a suitable investigation and report on the various matters to which your letter refers.

By order of the Boston Transit Commission.

(Signed) GEORGE G. CROCKER
Chairman.

The Dorchester tunnel, being an extension of the line from Cambridge, is to pass under Winter and Summer streets, crossing underneath the Tremont street subway and the Washington street tunnel. At these crossings it is therefore in the second-story below the surface of the street.

The cheapest and the best way to build it is by the open cut and cover method rather than by tunneling. Winter

ERRATA.

Page 15.—In the paragraph beginning “The top of the tunnel”, for “6 or 7” in the first and second lines, read “twenty-one.”

width of the street could be used for a sub-sidewalk or foot-way connecting at one end with the ticket lobby of the Cambridge Connection under Tremont street and at the other with the lobbies of the Washington street tunnel. Such a sub-passage might be lined with show windows and have connections with the basements or sub-basements of the abutting buildings. If made attractive and useful it would increase the value of the several properties and at the same time relieve surface sidewalk congestion.

While the Commission has authority to fill this space or leave it open, as it may deem expedient, it does not consider that it has power to go to expense in fitting up the space for a sub-sidewalk. If this should seem desirable, additional legislative authorization will be needed.

BOSTON AND EASTERN ELECTRIC RAILROAD CO.

The Commission sat with the Board of Railroad Commissioners as the Joint Board established by chapter 630 of the acts of the year 1910, being an act relating to the construction of the Boston and Eastern Electric Railroad tunnel.

This Joint Board organized September 12, 1911, by the choice of George G. Crocker, as Chairman, and James B. Noyes, as Secretary, and up to and including February 15, 1912, there were eighteen regular meetings and two informal conferences of which record was made.

On February 15, the Joint Board by the concurrent and unanimous action of the two commissions adopted a motion fixing the location, including grades and elevations, of the tunnel of the Boston and Eastern Electric Railroad in the city of Boston. See Appendix D.

This completes the work of this Joint Board until certain construction work has been done by the Company.

DEATH OF CORPORATION COUNSEL.

Upon the death of Hon. Thomas M. Babson, Corporation Counsel, the Commission ordered the following spread upon its records:

By the death of Thomas M. Babson, Corporation Counsel of the City, the Boston Transit Commission has lost an adviser upon whose wise counsel and strong legal intellect it has relied for the last seventeen years, and its members have lost a valued associate in the public service. His work has been a factor of prime importance in the framing and interpretation of subway and tunnel legislation. His advice to the Commission upon the great number of novel questions which have arisen since its organization, has been notably wise and farsighted and has always been marked by a spirit of just regard for the rights alike of the public, the railway companies and the individual citizen. He never failed to give evidence of honest and clear thinking, and his successful conduct of the many important cases arising out of the work of the Commission, and in which he was opposed by leaders of our bar, won him universal respect. This community has lost a public servant of high character whose wide knowledge and experience cannot be replaced and whose unblemished life, honorable standards and valuable services will long be remembered.

ORGANIZATION OF THE COMMISSION.

Pursuant to Statutes 1911, chapter 623, the term of the Commission and of its members has been extended for three years from the first day of July, 1911.

On July 5, 1911, the Commission organized for the extended term, by electing George G. Crocker, Chairman, B. Leighton Beal, Secretary, and Edmund S. Davis, Chief Engineer.

LEGISLATION.

Under chapter 108 of the Resolves of the year 1911 the Commission, acting as a Joint Board with the Board of Railroad Commissioners, made a report to the Legislature, January 11, 1912, which will be found in Appendix E.

The Legislature of 1912 passed two resolves instructing the Commission to do certain things as follows:

Chapter 27 — To provide for a report of a route for an extension of the Dorchester tunnel in the city of Boston. (See Appendix F).

Chapter 109 — Providing for an investigation of the advisability and cost of constructing a tunnel between the cities of Boston and Chelsea. (See Appendix G).

EAST BOSTON TUNNEL.

Toll Receipts.

The following is a statement of the receipts from tolls and the cost of collection of the same for the year ending June 30, 1912:

July 1, 1911, to July 31, 1911:			
Receipts	.	.	\$11,185 39
Cost	.	.	1,597 03
			<hr/>
			\$9,588 36
August 1, 1911, to October 31, 1911:			
Receipts	.	.	\$36,636 07
Cost	.	.	4,984 25
			<hr/>
			31,651 82
November 1, 1911, to January 31, 1912:			
Receipts	.	.	\$38,787 51
Cost	.	.	5,304 33
			<hr/>
			33,483 18
February 1, 1912, to April 30, 1912:			
Receipts	.	.	\$38,028 34
Cost	.	.	5,159 71
			<hr/>
			32,868 63
May 1, 1912, to June 30, 1912:			
Receipts	.	.	\$25,599 98
Cost	.	.	3,324 11
			<hr/>
			22,275 87
Total			<hr/>
			<u>\$129,867 86</u>

SINKING FUNDS.

The following is the condition of the debt and of the sinking funds for the various divisions of the work of the Commission at the date of this report, as stated by the City Treasurer:

SUBWAY (INCLUDING ALTERATIONS.)

(Debt, \$4,416,000, outside debt limit.)

Amount of fund, July 1, 1911		\$1,333,997 17
Interest on bank deposits, July 1, 1911, to date,	\$825 18	
Interests on investments, July 1, 1911, to date,	46,689 37	
Revenue, etc., July 1, 1911, to date	51,945 37	
		<u>99,459 92</u>
		<u>\$1,433,457 09</u>

CHARLESTOWN BRIDGE, No. 1.

(Debt, \$750,000, inside debt limit.)

Amount of fund, July 1, 1911		\$188,815 77
Interest on bank deposits, July 1, 1911, to date,	\$661 81	
Interest on investments, July 1, 1911, to date,	5,696 67	
Requirement for debt	7,912 00	
		<u>14,270 48</u>
		<u>\$203,086 25</u>

CHARLESTOWN BRIDGE, No. 2.

(Debt, \$805,000, outside debt limit.)

Amount of fund, July 1, 1911		\$221,682 96
Interest on bank deposits, July 1, 1911, to date,	\$569 64	
Interest on investments, July 1, 1911, to date,	6,694 33	
Requirement for debt	6,123 00	
		<u>13,386 97</u>
		<u>\$235,069 93</u>

EAST BOSTON TUNNEL.

(Debt, \$3,193,000, outside debt limit.)

Amount of fund, July 1, 1911		\$383,500 79
Interest on bank deposits, July 1, 1911, to date,	\$1,175 48	
Interest on investments, July 1, 1911, to date,	11,889 38	
Revenue, etc., July 1, 1911, to date	71,612 52	
		<u>84,677 38</u>
		<u>\$468,178 17</u>

BOSTON TUNNEL AND SUBWAY.

(Washington Street Tunnel.)

(Debt, \$8,484,700, outside debt limit.)

Amount of fund, July 1, 1911		\$506,288 38
Interest on bank deposits, July 1, 1911, to date,	\$742 39	
Interest on investments, July 1, 1911, to date,	17,220 33	
Revenue, etc., July 1, 1911, to date	52,933 97	
		<u>70,896 69</u>
		<u>\$577,185 07</u>

RAPID TRANSIT — CAMBRIDGE CONNECTION.

(Debt, \$1,331,000, outside debt limit.)

Amount of fund, July 1, 1911		\$12,558 12
Interest on bank deposits, July 1, 1911, to date,	\$297 06	
Premium on loans negotiated, July 1, 1911, to date	10,386 84	
		<hr/> 10,683 90
		<hr/> <u>\$23,242 02</u>

BOYLSTON STREET SUBWAY.

*(Formerly Riverbank Subway.)**(Debt, \$505,000, outside debt limit.)*

Amount of fund, July 1, 1911		\$1,378 81
Interest on bank deposits, July 1, 1911, to date		30 37
		<hr/> \$1,409 18

DORCHESTER TUNNEL.

(Debt, \$300,000, outside debt limit.)

EAST BOSTON TUNNEL EXTENSION.

(Debt, \$200,000, outside debt limit.)

AMOUNTS PAID FOR RENTAL OF THE SUBWAY.

The following sums have been paid during the year by the Boston Elevated Railway Company for the use of the subway:

Sept. 30, 1911:		
Net cost of subway	\$4,100,915 79	
One quarter's rental		\$49,979 91
Alterations: net cost	242,673 93	
One quarter's rental		2,957 59
Dec. 31, 1911:		
Net cost of subway	4,100,945 70	
One quarter's rental		49,980 28
Alterations: net cost	242,673 93	
One quarter's rental		2,957 59
March 31, 1912:		
Net cost of subway	4,100,955 72	
One quarter's rental		49,980 40
Alterations: net cost	242,673 93	
One quarter's rental		2,957 59
June 30, 1912:		
Net cost of subway	4,100,955 72	
One quarter's rental		49,980 40
Alterations: net cost	242,673 93	
One quarter's rental		2,957 59
		<hr/> <u>\$211,751 35</u>

AMOUNTS PAID FOR RENTAL OF THE WASHINGTON STREET TUNNEL.

The following is a statement of the bills rendered for rental of the Washington street tunnel and the amounts paid thereon:

	<i>Bills Rendered.</i>	<i>Paid.</i>
Sept. 30, 1911:		
Net cost of tunnel	\$7,557,419 44	*\$83,000 00
Rental for one quarter	\$85,020 97	84,000 00
Dec. 31, 1911:		
Net cost of tunnel	7,578,047 70	
Rental for one quarter	85,253 04	84,000 00
March 31, 1912:		
Net cost of tunnel	7,579,932 85	
Rental for one quarter	85,274 25	85,274 25
June 30, 1912:		
Net cost of tunnel	7,580,203 81	
Rental for one quarter	85,277 29	†
	<hr/>	<hr/>
	\$340,825 55	\$336,274 25

AMOUNTS PAID FOR RENTAL OF THE CAMBRIDGE CONNECTION.

The following sums have been paid during the year by the Boston Elevated Railway Company for the use of the Cambridge Connection:

March 30, 1912:		
Net cost of connection	\$1,299,736 62	
Nine days' rental, from date of opening (Mar. 23, 1912)		\$1,562 35
June 30, 1912:		
Net cost of connection	1,365,508 25	
One quarter's rental		16,642 13
		<hr/>
		\$18,204 48

STATEMENT OF EXPENSES.

The following is a classified statement of the expenses of the Commission for the year ending June 30, 1912:

SUBWAY.

General Expenses:		
Office — Stationery and printing	\$39 93	\$39 93

EAST BOSTON TUNNEL.

General Expenses:		
Office — Stationery and printing	\$39 93	39 93

ENGINEERING DEPARTMENT.

Field supplies	\$2 20	
Skilled service	188 15	
	<hr/>	
		190 35
<i>Carried forward</i>		\$270 21

* Paid on account of quarter ending June 30, 1911.

† Payment for this quarter had not been made at the date of this report (\$85,277.29).

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Brought forward \$270 21

SECTION B.

Construction	\$216 65	
Field supplies	507 47	
Labor	4,855 89	
Office supplies	171 69	
Skilled service	591 96	
Stenographers	13 50	
Teaming	46 05	
		6,403 21

SECTION C.

Construction	\$1 75	
Field supplies	32 34	
Labor	126 70	
Legal and expert advice	500 00	
Skilled service	74 03	
Stenographers	80 80	
		815 62

SECTION D.

Field supplies	\$131 28	131 28
		\$7,620 32

SECTION F.

Credit:

Construction, steel beams, transferred to Section 2, Cambridge Connection, ordered and paid for under East Boston Tunnel account and used on Cambridge Con- nection account	\$1,746 97	1,746 97
		\$5,873 35

BOSTON TUNNEL AND SUBWAY.

General Expenses:		
Office — Printing	\$39 94	39 94

ENGINEERING DEPARTMENT.

Skilled service	\$134 96	134 96
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SECTION ONE.

Property Damages: Takings	\$19,492 44	
Skilled service	17 14	
		19,509 58

SECTION TWO.

Alterations	\$19 05	
LaGrange street station:		
Miscellaneous	21 25	
Teaming	3 75	
	\$44 05	
Credit: Boylston street station — miscellaneous:		
Deduction from contract payment to cover repairs	3 50	40 55

Carried forward \$25,598 38

Brought forward \$25,598 38

SECTION THREE.

Alterations	\$350 15	
Essex street station:		
Miscellaneous	250 00	
Labor	22 31	622 46

SECTION FOUR.

Property Damages: Takings	\$20,517 05	
Skilled service	22 50	
Summer street station:		
Miscellaneous	51 40	
Telephone-telegraph	50	
Temple place station:		
Miscellaneous	12 86	
	<u>\$20,604 31</u>	
Credit: Winter street station — miscellaneous:		
Deduction from contract payment to cover		
repairs	1 72	20,602 59

SECTION FIVE.

Coleman Brothers (Contract No. 240)	\$1,000 00	
Old South station:		
Miscellaneous	38 91	
Property Damages: Takings	800 00	1,838 91

SECTION SIX.

Labor	\$11 67	11 67
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SECTION NINE.

Labor	\$11 68	11 68
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CAMBRIDGE CONNECTION.

Office Expenses:		
Furniture	\$10 25	
Lighting	57 65	
Printing	1,406 90	
Rental	2,250 00	
Stationery-supplies	343 19	
Telephone-telegraph	124 04	
Stenographers	2,197 07	
Messenger	702 00	
Clerks	776 25	
Salaries of Commissioners and Secretary	21,375 00	
	<u>\$29,242 35</u>	
Transferred to Boylston Street		
Subway	\$4,077 70	
Transferred to Dorchester Tunnel	4,700 53	
" " East Boston		
Tunnel Extension	2,350 32	
	<u>11,128 55</u>	18,113 80
<i>Carried forward</i>		\$66,799 49

<i>Brought forward</i>		\$66,799 49
Items chargeable directly to Cambridge Con-		
nection:		
Printing	\$49 50	
Stationery-supplies	105 96	
Telephone-telegraph	29 59	
		185 05

ENGINEERING DEPARTMENT.

Advertising	\$3 25	
Chief Engineer	3,874 84	
Clerks	345 06	
Field supplies	11 30	
Furniture	25 50	
Instruments	20 98	
Insurance	40 00	
Labor	962 65	
Legal and expert advice	450 00	
Lighting	278 65	
Messengers	536 90	
Printing	1,014 78	
Rental	2,250 00	
Skilled service	9,276 80	
Stationery-supplies	524 45	
Stenographers	2,634 38	
Telephone-telegraph	216 77	
Tools	1 20	
		22,467 51

SECTION ONE.

(From a point about 130 feet northwesterly from the corner of Grove and Phillips streets to a point on Boston Common about 220 feet southeasterly from Beacon street.)

Patrick McGovern (Contract No. 382)	\$42,989 25	
Alterations	450 90	
Field supplies	88 49	
Labor	1,079 84	
Legal and expert advice	680 00	
Lighting	63 25	
Property Damages: Takings	15,201 96	
Skilled service	125 17	
Stationery-supplies	40 75	
Telephone-telegraph	4 05	
Tools	106 71	
	\$60,830 37	
Credit: construction, returned cement bags	372 05	
		60,458 32

SECTION TWO.

(From the end of Section One under Boston Common and the Park street station of the Tremont street subway to Tremont street opposite Winter street.)

Coleman Brothers (Contract No. 393)	\$126,776 72	
Coleman Brothers (Contract No. 407)	5,114 87	
Builders Iron and Steel Company (Contract No. 408)	4,822 20	
Otis Elevator Company (Contract No. 404)	6,875 00	
Otis Elevator Company (Contract No. 405)	7,125 00	
John E. Palmer (Contract No. 413)	1,722 56	

Carried forward \$152,436 35 \$149,910 37

<i>Brought forward</i>	\$152,436 35	\$149,910 37
Advertising	9 85	
Alterations	1,198 93	
Borings	16 43	
Construction	49,539 43	
Field supplies	3,090 64	
Fuel	225 91	
Furniture	4 12	
Inspection	5 55	
Instruments	18 10	
Labor	33,021 07	
Legal and expert advice	391 98	
Lighting	3,776 96	
Paving	4,382 95	
Printing	14 50	
Skilled service	8,336 11	
Stationery-supplies	385 17	
Teaming	369 37	
Telephone-telegraph	139 19	
Testing	19 79	
Tools	1,019 01	
Water pipes	934 96	
		259,336 37

DORCHESTER TUNNEL.

Office Expenses:		
Proportion of general expenses, transferred from Cambridge Connection	\$4,700 53	
Proportion of general expenses, transferred from Boylston Street Subway	3,511 26	
Clerks	9 36	
Printing	976 76	
Stationery-supplies	170 02	
Stenographers	8 26	
		9,376 19
Engineering Expenses:		
Advertising	\$57 41	
Borings:		
Labor	837 08	
Material	14 85	
Clerks	88 88	
Field supplies	35 81	
Furniture	29 88	
Inspection	30 90	
Instruments	266 42	
Labor	619 55	
Legal and expert advice	180 00	
Lighting	7 05	
Messengers	180 63	
Printing	30 25	
Skilled service	20,062 28	
Stationery-supplies	561 89	
Stenographers	497 41	
Stock	2,672 59	
Testing	126 13	
Tools	392 57	
Proportion of salary of Chief Engineer, transferred from Cambridge Connection	708 33	
Proportion of salary of Chief Engineer, transferred from Boylston Street Subway	843 75	
		28,243 66
<i>Carried forward</i>		\$446,866 59

Brought forward \$446,866 59

SECTION A.

(From the end of the Cambridge Connection at the east line of Tremont street, under Winter street to about the west line of Washington street.)

Advertising	\$59 98
Damages	60 00
Field supplies	38 50
Labor	294 70
Lighting	7 00
Printing	202 80
Skilled service	402 44
Stationery-supplies	6 75
Teaming	57 10
Testing	2 65
Tools	4 71

1,136 63

SECTION B.

(From about the west line of Washington street, under Washington and Summer streets, to a point about 50 feet east of the east line of Arch street.)

Alterations	\$905 03
Labor	637 39
Lighting	8 45
Skilled service	322 85
Tools	41 85

1,915 57

SECTION C.

(From about 50 feet east of the east line of Arch street to a point in the vicinity of Dewey square.)

Construction	\$2,608 37
Inspection	30 15

2,638 52

BOYLSTON STREET SUBWAY.

Office Expenses:	
Furniture	\$4 75
Lighting	22 87
Printing	750 42
Rental	750 00
Stationery-supplies	145 66
Telephone-telegraph	50 00
Stenographers	757 76
Messenger	234 00
Clerks	260 00
Salaries of Commissioners and Secretary	7,125 00

\$10,100 46

Transferred to Dorchester Tunnel \$3,511 26

Transferred to East Boston Tunnel Extension 1,170 42

4,681 68

\$5,418 78

Transferred from Cambridge Connection 4,077 70

Transferred from Riverbank Subway 22,109 45

31,605 93

Carried forward \$484,163 24

<i>Brought forward</i>			\$484,163 24
Engineering Expenses:			
Advertising		\$151 05	
Borings:			
Labor		732 85	
Material		12 28	
Clerks		171 56	
Counting traffic		237 39	
Field supplies		113 40	
Furniture		150 00	
Inspection		61 49	
Instruments		281 48	
Labor		85 75	
Legal and expert advice		689 04	
Lighting		110 60	
Messengers		535 88	
Printing		259 93	
Rental		750 00	
Skilled service		21,290 59	
Stationery-supplies		928 33	
Stenographers		2,039 63	
Stock		1,270 44	
Teaming		2 00	
Telephone-telegraph		61 50	
Testing		137 08	
Tools		241 38	
Proportion of salary of Chief Engineer transferred from Riverbank Subway	\$2,083 50	\$30,313 65	
Proportion of salary of Chief Engineer transferred from Cambridge Connection	708 33		
Proportion of salary of Chief Engineer chargeable direct	1,125 00		
		3,916 83	
			34,230 48

SECTION ONE.

(From the easterly side of Kenmore street through Commonwealth avenue, the Fens, and Newbury street to the middle of Massachusetts avenue.)

Eastern Expanded Metal Company (Contract No. 422)	\$5,459 74		
Bethlehem Steel Company (Contract No. 426),	2,762 15		
Hugh Nawn Contracting Company (Contract No. 427)	109,715 12		
Advertising	71 45		
Borings:			
Labor	363 82		
Material	288 28		
Construction	5,401 10		
Field supplies	230 75		
Furniture	10 58		
Fuel	9 25		
Instruments	20 25		
Labor	1,445 17		
Legal and expert advice	805 60		
Lighting	83 03		
Printing	289 80		
Skilled service	1,285 50		
<i>Carried forward</i>	\$128,241 59	\$518,393 72	

<i>Brought forward</i>	\$128,241 59	\$518,393 72
Stationery-supplies	110 29	
Teaming	87 46	
Testing	47 20	
Test pits	55 58	
Tools	136 72	
		128,678 84

SECTION TWO.

(From the middle of Massachusetts avenue, under private property and Boylston street, to the easterly line of Hereford street.)

Legal and expert advice	\$100 00	100 00
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SECTION THREE.

(From the easterly line of Hereford street, under Boylston street, to the westerly end of the Public Library.)

Hugh Nawn Contracting Company (Contract No. 432)	\$25,845 99	
Advertising	70 40	
Borings:		
Labor	90 00	
Construction	3,479 71	
Field supplies	25 00	
Furniture	11 38	
Instruments	8 20	
Labor	822 80	
Lighting	35 55	
Printing	101 50	
Skilled service	584 72	
Stationery-supplies	46 83	
Testing	6 11	
Tools	4 50	
		31,132 69

EAST BOSTON TUNNEL EXTENSION.

Office Expenses:		
Printing	\$289 60	
Stationery-supplies	2 45	
Proportion of general expenses, transferred from Cambridge Connection	2,350 32	
Proportion of general expenses, transferred from Boylston Street Subway	1,170 42	
		3,812 79
Engineering Expenses:		
Advertising	\$5 57	
Clerks	30 00	
Furniture	4 50	
Instruments	36 53	
Legal and expert advice	150 00	
Printing	13 75	
Skilled service	2,235 13	
Stationery-supplies	139 74	
Stenographers	144 98	
Supplies (field)	15 67	
Tools	225 18	
Proportion of salary of Chief Engineer, transferred from Cambridge Connection	708 34	
Proportion of salary of Chief Engineer, transferred from Boylston Street Subway	281 25	
		3,990 64
<i>Carried forward</i>		\$686,108 68

Brought forward \$686,108 68

INTEREST.

Cambridge Connection	\$44,473 36
Boylston Street Subway	29,830 01
	<hr/>
	\$74,303 37

Credits:

Dorchester Tunnel	\$766 67	
East Boston Tunnel Extension	511 11	
	<hr/>	
	1,277 78	
		<hr/>
		73,025 59
		<hr/>
		\$759,134 27

CREDITS.

Subway — Park Street to South Station	\$532 47
Subways — Dorchester and South Boston	1,665 43
	<hr/>
	\$2,197 90
(Under the terms of Chapter 741, Acts of 1911, these accounts have been transferred to the Dorchester Tunnel account.)	
Riverbank Subway	45,835 30
(Under the same authority this account has been transferred to the Boylston Street Subway account.)	
	<hr/>
	48,033 20
	<hr/>
Net increase	<u>\$711,101 07</u>

SUMMARY.

	From beginning of work to June 30, 1911.	June 30, 1911, to June 30, 1912.	Total.
Subway — Subway Commission	\$14,131 16		\$14,131 16
Part of General Expenses	117,510 78	\$39 93	117,550 71
Engineering and miscellaneous	407,475 48		407,475 48
Section One	239,407 12		239,407 12
Two	363,605 50		363,605 50
Three	300,639 36		300,639 36
Three and one-half	9,355 70		9,355 70
Four	469,620 33		469,620 33
Five	388,955 49		388,955 49
Six	327,541 86		327,541 86
Seven	231,504 27		231,504 27
Eight	95,902 06		95,902 06
Eight and one-half	76,639 47		76,639 47
Nine	299,452 07		299,452 07
Ten	254,497 88		254,497 88
Eleven	270,310 57		270,310 57
Interest	258,575 60		258,575 60
	<hr/>		<hr/>
	\$4,125,124 70	\$39 93	\$4,125,164 63
Transfer to Alterations, see 11th report	4 95		4 95
	<hr/>		<hr/>
Total	<u>\$4,125,119 75</u>	<u>\$39 93</u>	<u>\$4,125,159 68</u>

	From beginning of work to June 30, 1911.	June 30, 1911 to June 30, 1912.	Total.
Alterations — Part of			
General Expenses . . .	\$28,945 53		\$28,945 53
Section Three . . .	2,568 26		2,568 26
Four . . .	163 42		163 42
Five . . .	30,233 01		30,233 01
Seven . . .	178,516 16		178,516 16
Nine . . .	3 00		3 00
Ten . . .	534 04		534 04
Interest . . .	1,905 56		1,905 56
Transfer from Subway, see 11th report, . . .	4 95		4 95
Total . . .	<u>\$242,873 93</u>		<u>\$242,873 93</u>
Charlestown Bridge:			
Total . . .	<u>\$1,570,197 98</u>		<u>\$1,570,197 98</u>
Investigation of Conges- tion of Traffic, etc.: .			
Total . . .	<u>\$3,015 92</u>		<u>\$3,015 92</u>
East Boston Tunnel — Part of General			
Expenses . . .	\$161,094 85	\$39 93	\$161,134 78
Engineering Expenses .	191,276 22	190 35	191,466 57
Section A . . .	98,869 09		98,869 09
B . . .	1,380,856 04	6,403 21	1,387,259 25
C . . .	484,352 21	815 62	485,167 83
D . . .	244,822 98	131 28	244,954 26
E . . .	188,201 14		188,201 14
F . . .	243,733 53	*1,746 97	241,986 56
Interest . . .	248,156 88		248,156 88
Total . . .	<u>\$3,241,362 94</u>	<u>\$5,833 42</u>	<u>\$3,247,196 36</u>
Boston Tunnel & Sub- way— Part of Gen- eral Expenses . . .	\$226,401 63	\$39 94	\$226,441 57
Engineering Expenses .	417,731 29	134 96	417,866 25
Section One . . .	736,974 04	19,509 58	756,483 62
Two . . .	642,910 01	40 55	642,950 56
Three . . .	461,158 20	622 46	461,780 66
Four . . .	1,768,247 32	20,602 59	1,788,849 91
Five . . .	1,041,603 83	1,838 91	1,043,442 74
Six . . .	335,057 26	11 67	335,068 93
Seven . . .	139,466 40		139,466 40
Eight . . .	616,253 51		616,253 51
Nine . . .	659,920 72	11 68	659,932 40
Ten . . .	142,880 35		142,880 35
Eleven . . .	345,493 91		345,493 91
Twelve . . .	45,417 52		45,417 52
Interest . . .	645,186 05		645,186 05
Total . . .	<u>\$8,224,702 04</u>	<u>\$42,812 34</u>	<u>\$8,267,514 38</u>
Cambridge Connection			
Office Expenses . . .	\$44,056 35	\$18,298 85	\$62,355 20
Engineering Expenses .	74,107 95	22,467 51	96,575 46
Section One . . .	466,946 64	60,458 32	527,404 96
Carried forward . .	<u>\$585,110 94</u>	<u>\$101,224 68</u>	<u>\$686,335 62</u>

* Decrease.

	From beginning of work to June 30, 1911.	June 30, 1911 to June 30, 1912.	Total.
<i>Brought forward</i>	\$585,110 94	\$101,224 68	\$686,335 62
Section Two	336,441 06	259,336 37	595,777 43
Interest	32,248 64	44,473 36	76,722 00
Total	<u>\$953,800 64</u>	<u>\$405,034 41</u>	<u>\$1,358,835 05</u>
Dorchester Tunnel			
Office Expenses		\$9,376 19	\$9,376 19
Engineering Expenses		28,243 66	28,243 66
Section A		1,136 63	1,136 63
B		1,915 57	1,915 57
C		2,638 52	2,638 52
Interest		*766 67	*766 67
Total		<u>\$42,543 90</u>	<u>\$42,543 90</u>
Boylston Street Subway			
Office Expenses		\$31,605 93	\$31,605 93
Engineering Expenses		34,230 48	34,230 48
Section One		128,678 84	128,678 84
Two		100 00	100 00
Three		31,132 69	31,132 69
Interest		29,830 01	29,830 01
Total		<u>\$255,577 95</u>	<u>\$255,577 95</u>
East Boston Tunnel			
Extension			
Office Expenses		\$3,812 79	\$3,812 79
Engineering Expenses		3,990 64	3,990 64
Interest		*511 11	*511 11
Total		<u>\$7,292 32</u>	<u>\$7,292 32</u>
Riverbank Subway:	<u>\$45,835 30</u>	<u>**\$45,835 30</u>	
Subway — Park Street to South Station	<u>\$532 47</u>	<u>**\$532 47</u>	
Subways — Dorches- ter and South Boston	<u>\$1,665 43</u>	<u>**\$1,665 43</u>	
Grand Total	<u>\$18,409,106 40</u>	<u>\$711,101 07</u>	<u>\$19,120,207 47</u>

* Decrease.

** Accounts transferred.

An index to the annual reports of the Commission will be found in Appendix H.

The report of the Chief Engineer is appended.

GEORGE G. CROCKER,	} Boston Transit Commission.
GEORGE F. SWAIN,	
HORACE G. ALLEN,	
JOSIAH QUINCY,	
JAMES B. NOYES,	

REPORT OF THE CHIEF ENGINEER.

Boston, June 30, 1912.

GEORGE G. CROCKER, GEORGE F. SWAIN, HORACE G. ALLEN,
JOSIAH QUINCY, JAMES B. NOYES, *Boston Transit
Commissioners.*

GENTLEMEN:—I herewith submit a report for the year ending on this date, referring principally to the completion of the station for the Cambridge Connection under and near the present subway station near Park street, to surveys, plans and construction of the Dorchester Tunnel and the Boylston-street Subway, and to surveys, studies and plans for the East Boston Tunnel Extension. The Dorchester Tunnel, Boylston-street Subway and the East Boston Tunnel Extension were authorized by Chapter 741 of the Acts of 1911. The act became a law on July 20th, 1911. Preparations were begun immediately to make the necessary surveys, and field work was begun July 27th, one week later.

The locations of the Dorchester Tunnel and the East Boston Tunnel Extension are shown on Plate 1 and the location of the Boylston-street Subway is shown on Plate 2.

TUNNEL UNDER BEACON HILL FOR THE CAM- BRIDGE CONNECTION.

The Beacon Hill Tunnel was opened for public travel March 23, 1912.

The work which has been done since the date of the last Annual Report, June 30, 1911, is the completion of the Park-street Station, a part of Section 2.

The main structure of the station and the methods of construction were described at length in the Sixteenth and Seventeenth Annual Reports.

A plan of the station, showing entrances and exits, accompanied the Annual Report for the year ending June 30, 1911.

Plates 3 and 4 show the interior of the finished station. For a further description see "Location or Description of

Structures" in a tabulated form opposite page 32, which table gives some of the more important statistical data.

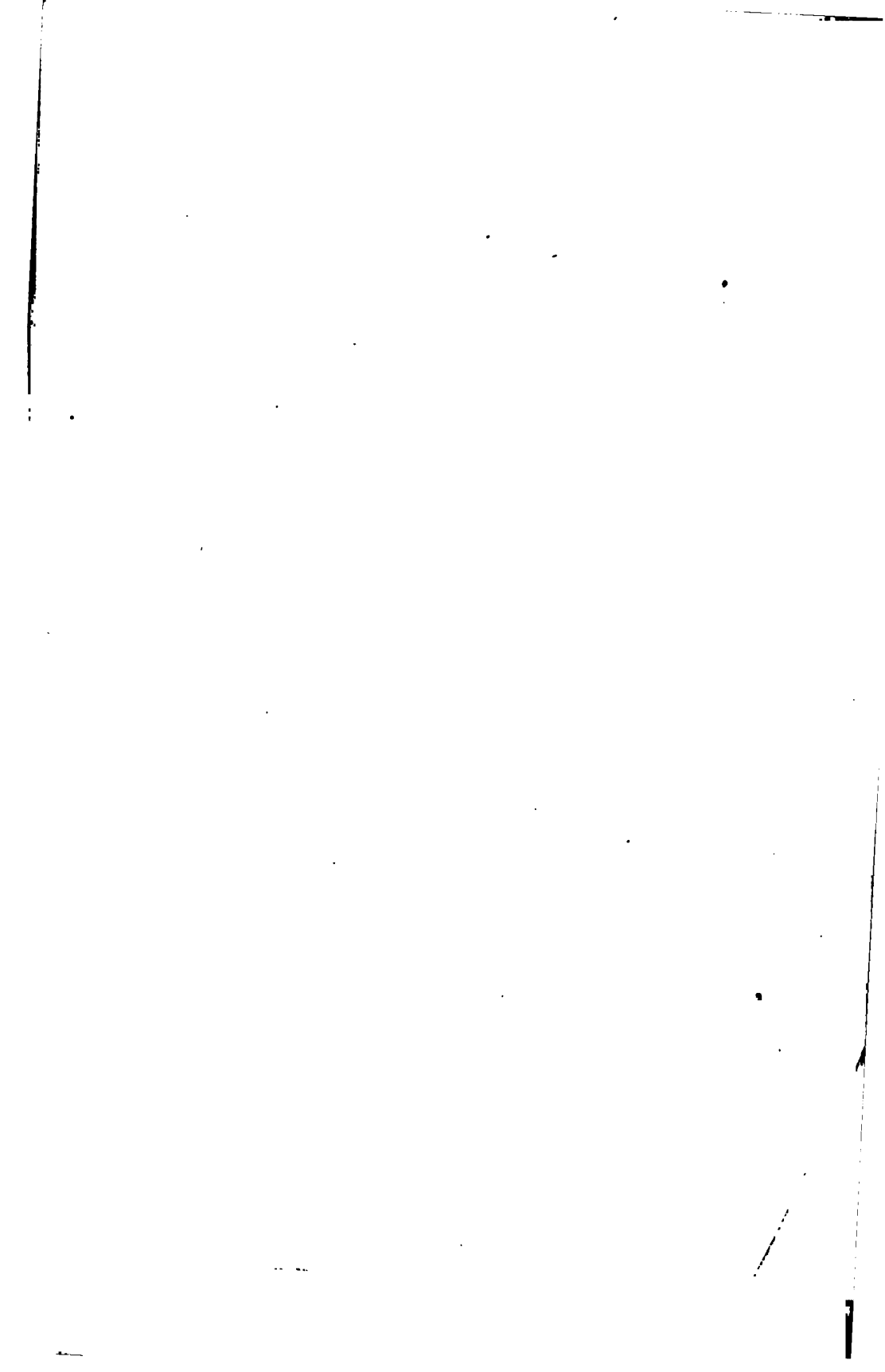
The completion of Section 2 included building a ticket office lobby under Tremont street, stairways, pump well and switch tower, furnishing and placing the inside finish, such as concrete platforms surfaced with granolithic, hollow ribbed-tile and glazed tile on the walls with a granolithic base below the glazed tiling, covering the ceiling and the walls above the glazed tile with white Portland cement plaster, covering steel columns with concrete having a granolithic finish, building polished terrazzo parapets around stairways, installing inclined elevators leading from the exit platforms to the surface of the street, etc.

At the easterly ends of the two platforms for unloading passengers are located inclined elevators. A double-file Reno inclined elevator, having three moving hand-rails, takes passengers from the northerly platform up to the sidewalk on the easterly side of Tremont street opposite Park street, a lift of 36.5 feet from the level of the station platform. It has a normal capacity of 7,000 passengers per hour and is driven by a 25 H. P. electric motor located in a chamber built under the elevator at its northerly end. From the southerly platform an escalator of the Seeberger type takes passengers up about 28.5 feet to the Tremont street sidewalk south of Winter street. This escalator has a normal capacity of 10,800 passengers per hour and is driven by a 35 H. P. electric motor located in a chamber under the escalator.

A two story reinforced concrete switch tower was built in the bell-mouth just west of the station at the end of the center platform. From this tower the switches are operated, which determine on which track of the station a train shall enter.

At the grade of the platforms of the Park-street Station of the Tremont-street Subway are reinforced concrete parapets around the stairway openings leading to and from the station for the Cambridge Connection below. With the exception of one which is covered with glazed tile these parapets are finished for a thickness of about one inch with polished terrazzo made of white Portland cement and marble chips. (See Plate 5.)

The walls of the station for a height of about six feet above the platforms are finished with white glazed tile laid vertically







HELIOTYPE CO. BOSTON

TUNNEL UNDER BEACON HILL FOR CAMBRIDGE CONNECTION. SECTION 2. PARK STREET STATION. LOOKING EASTERLY FROM SOUTHERLY PLATFORM.



HELIOTYPE CO., BOSTON

TUNNEL UNDER BEACON HILL FOR CAMBRIDGE CONNECTION, SECTION 2.
PARAPET, ON THE EASTERLY PLATFORM OF THE PARK STREET STATION
OF THE OLD SUBWAY, AROUND THE STAIRWAY LEADING FROM THE SIDE
PLATFORM OF THE NEW STATION BELOW.

with a border of crimson tile at top and bottom, which border is also carried around the groups of advertising panels.

There are 115 panels, 46 inches by 30 inches, for advertising; some single, others in groups of two or three, each panel surrounded by a brass frame and crimson tile. The arrangement of some of the panels and borders is shown on Plates 3 and 4. At intervals of about 70 feet on the sidewalls the name of the station "PARK STREET" in crimson and white ceramic tile is set into the plaster.

The pipes containing electric wires for lighting are laid within or back of the white plaster finish which covers the ceiling and the walls above the tiling.

The station contains a news stand, telephone booths, switch rooms, fire-hose closets, toilet rooms, and porters' closets. The telephone booths and closets are built of hollow tile and reinforced concrete.

The cost of construction of the public telephone booths, advertising panels and the news stand has been charged to the Boston Elevated Railway Company. The tracks, ballast, signals, ducts, wires, lights, plumbing, ticket booths, and destination signs were put in place by the Boston Elevated Railway Company.

The construction of Section 2 required the relocation of about 375 feet of 16-inch water pipe, about 215 feet of 30-inch and about 450 feet of 10-inch to 20-inch gas pipe, about 150 feet of 20-inch and 45 feet of 15-inch sewer pipe, and about 450 feet of Edison ducts. It also required minor changes in locations of fire pipes and of other services in the vicinity of the junction of Tremont and Winter streets. About 360 feet of 8-inch and 10-inch sewer was relaid on Boston Common.

The following are some facts relating to the whole tunnel under Beacon Hill and the new station near Park street for the Cambridge Connection: There were about 30,000 cu. yds. of concrete used; about 95,000 cu. yds. of earth excavated; about 700 tons of structural steel and about 735 tons of steel reinforcing rods used. The tunnel is 2,486 feet in length, of which 1,007 feet or about 40.5 per cent. is on curves. With the exception of less than 100 feet the curves are of about 4,000 feet radius or more. Thirteen hundred and eighty feet of the tunnel is under buildings, 650 feet under Boston Common and 456 feet under cross streets. The greatest depth of the bottom of the structure below the surface is about 100 feet,

at a point a little west of Mt. Vernon street. There the rail is 93 feet and the top of the structure is 70 feet below the surface. A profile showing the grades of the tunnel was given in the Sixteenth Annual Report. The gradients are as follows: Beginning at the westerly entrance on a descending grade of 3 per cent. and continuing on the 3 per cent. grade for a distance of 134 feet; then descending on a vertical curve for a length of 200 feet; then descending on a 0.5 per cent. grade for a length of 610 feet; then descending on a 0.7 per cent. grade for a length of 868 feet, and then level for a distance of 674 feet. Two thousand, one hundred and twenty-five feet, or about 85.5 per cent., was built by tunneling. The remaining 361 feet, or 14.5 per cent., was built by open cut methods.

The leakage of the whole tunnel, as measured in April by the water collected in a pump well at the easterly end, is only 1.22 gallons per minute.

DORCHESTER TUNNEL.

The tunnel is to be a two-track structure to connect with the Cambridge Connection at Tremont and Winter streets, thus completing a through line from Harvard square, Cambridge, to Andrew square in South Boston near the Dorchester line. The route (see Plate 1) is through Winter and Summer streets to Atlantic avenue, thence southerly under the South Terminal yards and Fort Point Channel and thence under Dorchester avenue in South Boston to Andrew square. The total length of the tunnel will be about two miles.

There are to be four stations along the route, the first in Summer street, east of Washington street and extending to a point about 44 feet east of Arch street, the second in Atlantic avenue west of the South Station, the third near Broadway and the fourth will be the terminus in or near Andrew square.

SURVEYS.

The field work began July 27, 1911. Owing to the crowded conditions of Winter and Summer streets and Dewey square, the base line survey over this portion of the route was done at night. Two survey lines were run over the length of the route, one on either side of the street.

BORINGS AND GEOLOGY.

There have been 36 two-inch test borings made with an average depth of about 56 feet. The Charles R. Gow Co.

was the contractor. The borings were located as follows:

- 23 borings south of the Fort Point Channel, along Dorchester
avenue.
4 " in and near the Fort Point Channel.
9 " north of the Fort Point Channel, along Atlantic
avenue, Dewey square, Summer street, and
Winter street.

The geology as indicated by the borings is in general as follows: In Winter street, Summer street, and Atlantic avenue sand, gravel, and clay are found, the sand-and-gravel pockets frequently containing ground water. Under and adjacent to the Fort Point Channel, at the proposed depth of the tunnel, is a stratum of blue clay a little softer than that which was found in constructing the East Boston Tunnel. Under Dorchester avenue, South Boston, from Broadway to a point within about 1,200 feet of Andrew square, sand and gravel are found to a depth of about 25 feet to 35 feet, then a bed of blue clay. The sand and gravel probably contains considerable ground water, as much of this part of Dorchester avenue lies very close to tide water. From the above mentioned point for a distance of about 1,800 feet southerly along Dorchester avenue, through Andrew square, sand and gravel are found more than 60 feet deep in places, with no trace of the bed of blue clay.

PLANS.

In addition to the contract plans for Section A, three sets of plans covering the whole route have been plotted, respectively scaled 100, 20, and 8 feet to the inch. For the part of the line in and near Winter street a plan on a scale of 4 feet to the inch was made.

A large number of studies have been made for the stations and for the detail location and profile of the tunnel.

Contract plans are now being made for Section B, extending easterly about 625 feet from the end of Section A at Washington street, and including the station and entrances from the street, a pump well, and passageways connecting this station with the existing Summer and Winter Stations of the Washington-street Tunnel. Summer street has near Washington street a width of about 60 feet, and the proposed station and passageways will occupy almost the entire width, making necessary the underpinning of all the adjoining buildings except the new

Filene Building. Plans for the portion of the tunnel in Summer street, Dewey square, and Atlantic avenue, from near Arch street to the South Station, are also being made. This portion will be of the two-track single-arch type, and will include a ventilating chamber.

SECTION A.

Section A is about 500 feet long and is located in Winter street. It begins at the easterly end of the tunnel for Cambridge Connection, at Tremont street, and extends to near the center of Washington street below the present Washington-street Tunnel. The contract for construction was awarded to the Coughlan and Sheils Co. May 24, 1912, (See Appendix DD for canvass of bids) and work was begun six days later. Most of the work done to date has been excavation and underpinning. The bottom of the excavation for this section is about 40 feet below the surface of the street. In designing this portion of the tunnel it was estimated to be most economical to make it a two story structure, using the lower story for cars and leaving the upper one for a connection between the present ticket office lobby at Tremont street and the present Winter street ticket office lobby at Washington street or for any other purpose for which it may properly be used. A typical cross section is shown on Plate 6.

The width of Winter street is only about 36 feet and almost all of this is needed for the tunnel structure. All of the buildings on both sides of the street, with the exception of the new Gilchrist Building, will have to be underpinned to the depth of the bottom of the tunnel. As the tunnel will interfere with the present sewer, two new cast iron pipe sewers will be laid, one for each side of the street, on the floor of the upper story of the tunnel. The roof of the structure will be about 6 or 7 feet below the surface of the street. This will allow ample room for water and gas pipes and electric conduits above the tunnel.

BOYLSTON STREET SUBWAY.

This subway is to be a two track structure about 1.9 miles in length designed for large surface cars. Its location is shown on Plate 2. The route and location of stations was in general fixed by the act authorizing its construction. The inclined

entrance at its westerly end is in the Commonwealth avenue Parkway at the easterly side of Kenmore street. From this point the subway descends, curving to the right and going under the Collins Memorial Statue, the Fenway and the Back Bay Fens. Thence curving to the left it passes under the Stony Brook Conduit and Charlesgate East to Newbury street. It then continues under Newbury street on an up grade to Massachusetts avenue, thence through private property and land belonging to the City of Boston and on a curve to the left into Boylston street west of Hereford street. It then continues in nearly a direct line in and under Boylston street to near the corner of Tremont street. From this point to Park street the precise location of the subway and the stations has not yet been determined. Some changes in the present subway and the Boylston-street and Park-street Stations may be necessary. Other stations will be located at Massachusetts avenue and at Copley square. A pump well, ventilating chamber and emergency exit are located in the Fenway east of the creek, and a ventilating chamber and emergency exit are located on the southerly side of Boylston street near Fairfield street. The lowest part of the subway is under the Stony Brook Conduit where the level of the track will be about 19 feet below mean low water of the sea and 27 feet lower than the surface of the water in the Charles River Basin.

SURVEYS.

Immediately after the passage of the act authorizing the construction of the subway the preliminary work and surveys were begun.

BORINGS.

Twenty-three test borings were sunk to an average depth of about 40 feet, to determine the character of the earth upon which the subway is to be built. The Charles R. Gow Company was the contractor employed to do the work. The borings were located as follows:

Commonwealth avenue at Beacon street.

" " " Kenmore street.

" " between Charlesgate West and Kenmore street.

" " corner of Charlesgate West.

Fenway, West Side of Muddy River.

" East " " " "

Newbury street, corner of Charlesgate East.

" " in front of Volkmann school.

" " corner of Massachusetts avenue.

Boylston street, opposite Hereford street.

" " " Gloucester street.

" " " easterly line of Fairfield street.

" " " " " Exeter street.

City Yard.

South East corner, Boylston street and Dartmouth street.

North East " " " " Clarendon street.

" " " " " Berkeley street.

" " " " " Arlington street.

South West corner, Hereford street and Newbury street.

" " " " " Commonwealth avenue, South.

" " " " " Marlboro street.

" " " " " Beacon street.

South side of Newbury street, opposite Alley back of Hotel Somerset.

The last four were made on account of proposed sewer changes.

GEOLOGY.

In general the geology of the ground from near Kenmore street to Arlington street as indicated by the borings is as follows: Beginning at the surface there is a fill of gravel and sand to a depth of about 17 feet; below this fill is the original surface of the Back Bay composed of silty clay and peat, which has a thickness of from 5 to 20 feet and is generally impervious to water; below this silt lies a body of water-bearing sand and gravel, of from 5 feet to 17 feet in thickness, which overlies the clay, such as is generally found under the entire Boston basin. This lower stratum of sand and gravel carries a large amount of water heavily charged with sulphuretted hydrogen. It has been considered necessary to support the subway with piles where the bottom lies in or above the silt layer before mentioned.

PLANS.

Three sets of plans covering the whole route have been plotted, respectively scaled 200, 100 and 20 feet to the inch. Contract and detail plans on larger scales have been made for Sections 1 and 3. Studies for stations near Massachusetts avenue and at Copley square and for the lay-out for other parts of the work have been made.

CONSTRUCTION.

The contract for the construction of Section 1, extending from the easterly side of Kenmore street to about the centre of Massachusetts avenue, a length of 1,936 feet, was awarded to the Hugh Nawn Contracting Co., March 14, 1912, (See Appendix Y for Canvass of Bids) and the contractor immediately began work. The contract for Section 3, extending from Hereford street to near the Public Library in Boylston street, a length of 1,880 feet, was awarded to the Hugh Nawn Contracting Co. May 9, 1912, (See Appendix CC for Canvass of Bids). The contractor began work on this section May 13, 1912. The intervening space between Sections 1 and 3, called Section 2, was on June 13, 1912, divided and the westerly portion, embracing the Massachusetts-avenue Station, was made an extension of the contract for Section 1 and the easterly portion was included in an extension of the contract for Section 3.

Tables opposite page 32 give some other data in regard to these contract sections.

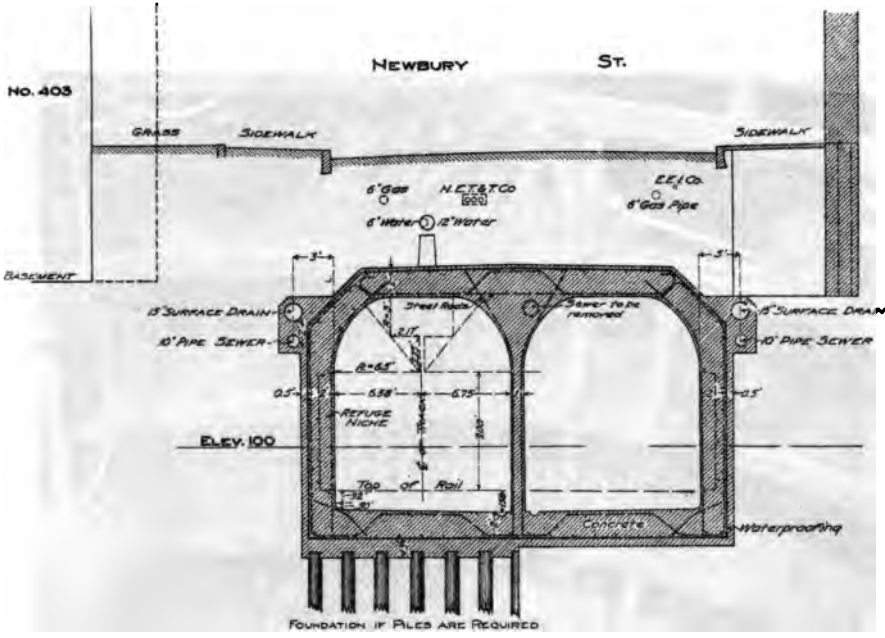
SECTION 1.

A typical cross section is shown on the upper half of Plate 7. Wherever a pile foundation has been necessary the entire width of the subway excavation has been opened and carried to grade at one time, using heavy yellow pine timbers, extending the full width of the excavation, for bracing. As a preliminary to construction across Charlesgate West and the Fens, a temporary pump well was sunk alongside of the subway location on the westerly side of the Fens. The permanent pump well is rectangular and is located on the easterly side of the Fens. In order to have no timbering or bracing which might interfere with the construction of this well a circular excavation about 31 feet in diameter was made to a depth of about 50 feet. For the upper part, which was about 34 feet in diameter, wooden circular forms were used, back of which yellow-pine tongued-and-grooved sheeting about 16 feet in length and 3 inches thick was driven. Below this, United States steel sheet piling, 35 feet long, was driven into the underlying clay. (See Plate 8.) In order to carry on the work across the Fens a temporary coffer-dam has been constructed on the line of the subway location. Each of the two sides of

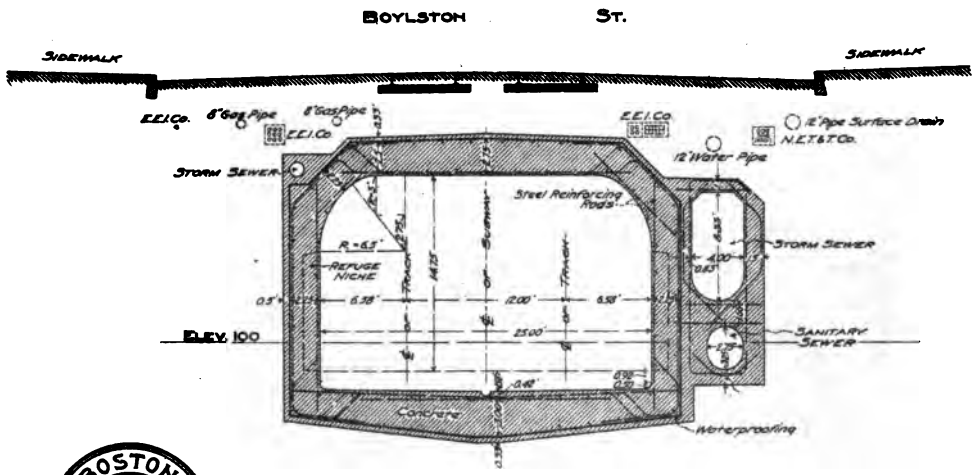
the dam was made by driving two rows of 3-inch tongued-and-grooved sheeting, 7 feet apart, and filling in the space between the rows with earth. The top of the sheet piling is cut off at elevation 111, that being the elevation at which the overflow gates from Stony Brook into the Fens are set so as to let the water into the Fens in case of a very severe storm. The water in the Fens south of the work has been kept about 7 or 8 feet lower than the top of the coffer dam by drawing it off through the Stony Brook Conduit. Overflow flumes, 10 feet wide, have been constructed through the coffer-dam as a measure of safety, so that if the water on the up stream side of the dam should rise to elevation 109 no damage would result to property in the neighborhood. No storm has yet occurred to raise the water in the Fens to this height. The Boston Transit Commission base, Elev. 0, is 100.64 feet below mean low water of the sea or 100 feet below Boston city base. The water in the coffer-dam was pumped out during the week ending May 25, 1912, and excavation for the subway carried down to grade, the sides of the trench being supported by means of Friestedt steel sheet piling braced across the excavation.

In Newbury street, opposite the Hotel Somerset and the Hotel Eastgate, trenches about 10 feet wide were excavated to about elevation 105 along the lines of the side walls of the subway. Friestedt steel sheet piling, 35 feet in length, was driven in the trenches to a depth of about 5 feet below the grade of the bottom of the subway, through the water-bearing sand and gravel and into the underlying clay. Portland cement grout was then forced into the sand and gravel back of the sheet piling before the excavation for the subway between the lines of the sheet piling was begun. All of this was done to protect the buildings, as the grade for excavation in front of the above-mentioned buildings is below the bottom of the piles upon which their foundations rest.

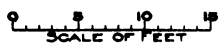
Over the bottom of the excavation a layer of concrete not less than 4 inches in thickness is laid and on each side of the subway location a back wall not less than 6 inches in thickness is built. This bottom layer of concrete and also the face of the back wall is mopped with hot liquid waterproofing and several layers of fabric are applied, each layer mopped with the hot waterproofing material. After the concrete roof is put in place



SECTION 1 BOYLSTON ST. SUBWAY
CROSS SECTION 340 FT. WEST OF MASSACHUSETTS AVE.



SECTION 3 BOYLSTON ST. SUBWAY
CROSS SECTION 270 FT. WEST OF FAIRFIELD ST.





HELIOTYPE CO. BOSTON

BOYLSTON STREET SUBWAY, SECTION 1. EXCAVATION FOR PUMP WELL AT STATION 9+60 CARRIED ABOUT 50 FEET BELOW THE SURFACE. BELOW THE UPPER SET OF 3-INCH TONGUE AND GROOVED SHEETING IS SEEN THE STEEL SHEET PILING 35 FEET LONG.



HELIOTYPE CO. BOSTON

BOYLSTON STREET SUBWAY, SECTION 1. LOOKING EASTERLY FROM ABOUT STATION 3 + 50.
ON THE LEFT IS THE NORTHERLY CONCRETE SIDE WALL WITH REINFORCING RODS PROJECTING.
ON THE RIGHT ARE THE ADJUSTABLE STEEL FORMS IN PLACE FOR THE CENTER WALL.

the upper side of the roof is waterproofed in the same manner and a layer of concrete 4 inches in thickness is placed over the waterproofing for its protection. The whole concrete structure, including invert, walls and roof, is reinforced with twisted steel rods of various sizes. (See Plate 9.)

To prevent shrinkage cracks and consequent leakage steel reinforcing rods are placed longitudinally in the structure, leaving expansion joints at intervals of about forty feet. The varying temperatures cause the concrete to expand and contract more or less according to the degrees of heat or cold and if expansion joints are not provided cracks will develop. At the joints, strips of lead 10 inches wide and about $\frac{1}{2}$ of an inch thick are placed in the concrete as the work is built up, so that 5 inches of the width of the lead extends into the concrete on each side of the joints. The lead being flexible, as placed, encircles the structure within the concrete and is intended to keep the ground water from leaking through these joints.

The Collins Memorial Statue in Charlesgate West on the line of the subway, has been temporarily moved a few feet to the north, blocked up on the sidewalk and will be replaced in its original position after the completion of the subway at this place.

Three poplar trees in Charlesgate West and a few smaller trees and shrubs in the Fens have been removed. Arrangements were made with the Park Department of the City of Boston whereby three English elms in the Commonwealth avenue Parkway have been removed, and they are to be replaced after the completion of the subway. The other elms in the Parkway have been carefully protected and watered and appear to be in good condition.

PIPE CHANGES.

About 517 linear feet of 48-inch water pipe has been relocated in Commonwealth avenue and Parkway. The new pipe was laid before the old pipe was exposed in the subway excavation.

About 50 feet of 24-inch gas pipe has been cut into sections by the Gas Company and removed.

SECTION 3.

A typical cross section is shown on the lower half of Plate 7. The method of operation for the construction of this section

has been different from the method used on Section 1 on account of the location of car tracks in the street and the probability that a pile foundation will not be necessary on any portion of the section. The south side wall and the sewers between Hereford street and a point near the Hotel Lenox have been partially constructed, it being the intention after this side wall is finished to construct a northerly side wall and then to bridge over the intermediate space under the car tracks and construct the roof, after which the core will be removed and the invert built. Large quantities of water have been encountered in this work, and there is a strong odor of sulphide of hydrogen from the silt encountered in this excavation, which makes the operations somewhat disagreeable.

SEWERS.

Large existing sewers running across Boylston street at Hereford, Fairfield and Dartmouth streets have to be dealt with in constructing the subway. In order to avoid the use of a permanent siphon the large sewer which crosses the subway location at Fairfield street will be cut out, and a new sewer constructed along the southerly side wall to Hereford street, where it will go below the subway and run into a new sewer to be built in Hereford street leading to the marginal conduit. To take care of the present Fairfield street sewer during the construction of the other work a temporary siphon consisting of two 36-inch cast iron pipes has been laid across Boylston street under the subway location.

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EAST BOSTON TUNNEL EXTENSION.

The location is shown on Plate 1 and is as follows: Beginning in the present tunnel near the westerly line of Washington street and running westerly under Court street to its present terminus the grade of the present tunnel will be changed so as to run under the present Scollay square station of the Tremont

street Subway with a station for the East Boston Tunnel traffic at this point. Thence it will continue westerly under Court street, Bowdoin square and Cambridge street to an incline, where it will come to the surface and connect with the surface tracks near Chambers street. A station at Bowdoin square or in Cambridge street adjoining is contemplated. The total length of the East Boston Tunnel Extension will be about 2,300 feet.

Surveys along the route were begun August 1, 1911, and continued during the fall. Plans of the district showing street lines, surface objects, grades, etc., on scales of 50 feet and 20 feet to the inch, and a large number of plans showing studies for various schemes of the proposed stations, have been made. The proposed station at Scollay square in particular has required a great deal of study, especially in regard to desirable connections with the station above on the Tremont street Subway.

WASHINGTON STREET TUNNEL.

In May, 1911, the property at the north-east corner of Washington and Summer streets, originally taken by the Commission in connection with the construction of the Washington-street Tunnel, excepting so much of the same as is occupied by entrances and exits to the Washington-street Tunnel, was transferred by the Commission to the Business Real Estate Trust of Boston, reserving to the City of Boston such portions below the basement floor of the building transferred as may be at any time required for subway or tunnel purposes or incidental thereto. Under the terms of the sale, and with the approval of the Boston Elevated Railway Co., certain show-window privileges were granted along the Summer-street Station platform and also rights of entrance from the station into the building to be erected to be known as the New Filene Building.

The necessary alterations in the Summer-street Station for carrying out the provisions of the above agreement were begun during January, 1912, and are not quite finished at the date of this report. The location of the entrance from Washington street has been slightly changed and the entrance and exit stairway from Summer street is being moved about 6 feet nearer to the corner of Washington street and widened from about 14 feet to about $17\frac{3}{4}$ feet to make of it also an

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WASHINGTON STREET TUNNEL

In May, 1911, the property at the north-east corner of Washington and Summer streets, originally taken by the Cambridge Tunnel, excepting so much of the same as it occupies by entrances and exits to the Washington Street Tunnel, was transferred by the Commission to the Business Loan Board Trust of Boston, reserving to the City of Boston such portion below the basement floor of the building transferred as may be at any time required for subway or tunnel purposes or incidental thereto. Under the terms of the lease and with the approval of the Boston Elevated Railway Co. certain show-window privileges were secured along the building front. Station platform and main lines of entrance from the building into the building as is shown in the plan of the building.

The necessary arrangements in the building for the station for carrying out the intention of the Board of Directors were begun during January, 1911, and up to date of the date of this report. The station is located at the Washington Street line level, and is connected with the Washington exit stairway from Summer street by a lower level, and is situated from about 14 feet to about 17 feet below the surface of the street.

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entrance to the proposed station for the Dorchester Tunnel. The work is being done by Wells Bros. Co. of New York as a part of its contract for constructing the New Filene Building, and the expense of the changes, excepting the entrance for the Dorchester Tunnel, is being borne by the owners of the property.

ENGINEERING FORCE.

The assistant engineers and others in the engineering force have done efficient service. The names of those who have been employed for more than one month are given in Appendix I. Mr. Howard A. Carson, Consulting Engineer, has given considerable time and valuable advice in regard to the East Boston Tunnel.

Respectfully submitted,

EDMUND S. DAVIS,
Chief Engineer.

APPENDIX A.

CAMBRIDGE CONNECTION.

The Cambridge Connection was constructed by the Boston Transit Commission, EDMUND S. DAVIS, Chief Engineer, under Section 23, Chapter 520, Acts of 1906.

Work was begun September 29, 1909.

PRINCIPAL CONTRACTORS.

Patrick McGovern	Stephen T. Keith
Coleman Bros.	Muir Bros.
J. P. O'Connell & Co.	Bethlehem Steel Co.
David W. Lewis Co.	Builders Iron & Steel Co.
Edison Portland Cement Co.	Eastern Expanded Metal Co.
Otis Elevator Co.	Wm. H. Perry Co.
John E. Palmer	Carnegie Steel Co.
	H. W. Hayes & Co.

Amount of concrete used, about 30,000 cubic yards.

Amount of earth excavated, about 95,000 cubic yards.

Amount of structural steel used, about 700 tons.

Amount of steel reinforcing rods used, about 735 tons.

Length of tunnel, 2486 feet, or about .5 mile.

Length on curves, about 1007 feet, or about 40.5 per cent. Curves mostly of 4000 feet radius, or more.

Curvature, total deflection, $16^{\circ} 4' 23\frac{1}{2}''$.

Length wholly or partly under buildings, about 1380 feet; about 650 feet under Boston Common and about 456 feet under cross streets.

Greatest depth of bottom of structure below surface, 100 feet at a point a little east of Mt. Vernon street.

Greatest depth of top of rail below surface, 93 feet.

Inside width of tunnel, nowhere less than 26 feet.

Grades:— Entrance at west portal, 3% down, or 3 feet in 100 for a distance of 134 feet; then down a vertical curve for 200 feet; then down 610 feet of a .5% grade, or half a foot in 100; then 868 feet down on a .7% grade, or .7 of a foot in 100; then level for a distance of 674 feet.

2125 feet, or about 85.5%, was built by tunneling through the earth, and the remaining 361 feet, or 14.5%, was built by open cut from the surface.

The average thickness of the side walls and roof is about 2.5 feet.

The ventilation is to be provided by electrically operated fans just west of Park street station. The fans draw the air out of the tunnel, and fresh air comes in at the westerly portal and at the entrances to the station at Park street.

The station is provided with telephone booths, news stand and toilet rooms.

There are no floors, partitions, or sheathings of wood. With the exception of hand rails on the staircases and certain portions of the inclined elevators no part of the structure is inflammable.

The station at Park street has three platforms, each 350 feet long. The center platform will be used only for passengers taking the cars. The two side platforms will be used only by passengers leaving the cars.

There are connections with the Tremont street subway.

The total cost of the tunnel will be about \$1,300,000.

CAMBRIDGE MAIN STREET SUBWAY.

The new route from Park street, Boston, to Harvard Square, Cambridge, is via a tunnel under Beacon Hill, then over a short piece of elevated structure, over Cambridge Bridge and through the Cambridge Subway to Harvard Square.

The elevated structure in Boston was constructed by the Boston Elevated Railway Company, Mr. George A. Kimball, Chief Engineer.

The Cambridge Bridge over the Charles River was constructed by a Commission of the Cities of Boston and Cambridge, the late William Jackson, Chief Engineer, under Chapter 467 of the Acts of 1898.

The Cambridge Main Street Subway was built by the Boston Elevated Railway Company, Mr. George A. Kimball, Chief Engineer, under Chapter 520 of the Acts of 1906.

Work was commenced on the elevated structure in Boston on June 1, 1911.

Preliminary preparations for the Cambridge Main Street Subway were begun in the spring of 1909. The actual work on the subway was commenced July 12, 1909.

The principal contractors on the Elevated structure in Boston were the Boston Bridge Works and the Hugh Nawn Contracting Company.

The track floor of the Cambridge Bridge was built by the Boston Elevated Railway Company's forces.

The Cambridge Main Street Subway contractor was the Hugh Nawn Contracting Company.

The length of the elevated structure from the tunnel portal to the Cambridge Bridge is 678 ft.

The length over the bridge from the end of the elevated structure to the Cambridge end is 2039 ft.

Cambridge bridge to the top of the subway incline is 359 ft.

The length of the Cambridge Main Street Subway to the portal near Eliot Square, including the Cambridge Bridge Incline, is 12,676 ft.

The length of the subway for surface cars under Harvard Square, including open inclines, is 1699 ft.

Cambridge Main Street Subway was built in open cut from the river to Pleasant street near the Cambridge City Hall, thence by tunnel under Dana Hill to Putnam Square, thence by open cut to Harvard Square and beyond.

The length of the subway built in tunnel with shield was 2532 ft.

The names of the stations in Cambridge given in order of outbound traffic from Boston are:

Kendall (Main street from Third st. to Pioneer st.)

Central (Mass. ave. from Pearl st. to Prospect st.)

Harvard (Mass. ave. and Harvard Sq. from Holyoke st. to Palmer st. and to Church st.)

The lengths of platforms at the stations are as follows:

Kendall Sq. inbound platform	288 ft.	outbound platform	270 ft.
Central Sq. " "	300 ft.	" "	300 ft.
Harvard Sq. " "	320 ft.	" "	283 ft.

Distances between Stations:

Park St. to Kendall Sq. - - - - - 1.27 miles

Kendall Sq. to Central Sq. - - - - - .96 "

Central Sq. to Harvard Sq. - - - - - .97 "

Total Park st. to Harvard Sq. - - - - - 3.20 "

From center of Park St. Station to center of Harvard Sq. Station:

Length on curves, 6520 ft., 38.6 per cent of total length.

Length on straight line 10,360 ft., 61.4 per cent of total length.

Curvature, total deflection, 155°50'53".

Total track measured as single track about 10 miles.

The stations are provided with telephone booths, news stands and toilet rooms.

There are no floors, partitions, or sheathings of wood. Excepting the hand rails on the staircases, portions of the ticket booths, turnstiles and signs, there is no exposed woodwork or inflammable material.

In the Cambridge Subway transfer privileges are provided at Kendall Square and Central Square by which the passengers may change from the subway trains to the surface cars, while at Harvard Square the surface cars are brought into the subway so that passengers may change from the trains to the surface cars by means of underground passages.

In addition to the openings into the stations and the subway portals ventilation is provided by means of six ventilation chambers having side-walk gratings. These are located along Main street at Sixth, Portland and Austin streets respectively and along Massachusetts avenue at Clinton, Bay and Remington streets. At each of the ventilation chambers provision is made for an emergency exit from the subway.

Amount of concrete used, about - - - - - 162,000 cubic yards

Amount of structural steel used, about - - - - - 3,200 tons

Amount of steel reinforcing bars used, about - - - 7,400 tons

Approximate length wholly or partly under buildings, 460 ft.

Inside width for two-track subway nowhere less than 25 ft.

Height of ceiling above top of rail not less than 14.75 ft.

Greatest depth of top rail below surface about 41 ft. (near Dana street).

Greatest depth of bottom of structure below surface about 45 ft. (near Dana street).

Least depth of top of rail below surface about 19.5 ft. (at Kendall Sq. Station).

Least depth of bottom of structure below surface, except at inclines, about 24 ft. (at Kendall Sq. Station).

The following is from the Auditor's Department:

Cost of Cambridge Main Street Subway, connections & equipment:—

Subway, track, line, etc.	\$7,400,000.00
Terminal complete	1,000,000.00
Bridge with track line, etc.	600,000.00
Beacon Hill Tunnel equipment	250,000.00
Cars & power	1,200,000.00
Total	\$10,450,000.00

The cars to be used in the Cambridge Subway service represent a new departure, especially designed for rapid loading and unloading. They are longer and wider than the cars used elsewhere for similar service, and are provided with three doors on each side; these doors so dividing the side of the car that the greatest distance from any point in the car to the nearest exit is 10 ft. The dimensions of the car are as follows:

Length over all 69' 2½".

Width over all 9' 6".

Height from rail to top of roof 12' 6½".

Each car is provided with partitions and sliding doors so that one end may be converted into a smoking compartment.

In service, trains will be operated of two, three or four cars. With a two car train the smoking compartment will be at the forward end running from Harvard Sq. to Park St. and on the rear end running in the opposite direction.

With a three or four car train there will be two smoking compartments, one in the forward and one in the rear car. An external sign is provided to show the location of the smoking compartment.

All smoking compartments will be separated from the rest of the car by a locked door.

The cars were designed and built by the Standard Steel Car Co. of Newcastle, Penn., being of steel construction throughout, the only wood used being the doors and sash.

The trucks were furnished by the J. G. Brill Co. of Philadelphia, Pa., and are of their No. 27 type, there being one motor truck and one trailer truck to a car. The wheel base of motor trucks is 7 feet, and trailer trucks 6 ft. The distance between truck centres is 51 ft.

Westinghouse Union switch control, and Westinghouse 300-C motors are used. These motors are of 200 H.P. capacity each, two being mounted on one truck of each car.

The cars are equipped with the A.M.L.E. electro pneumatic brake equipment with L.E. 4 triple valve.

POWER. The current for the operation of the subway is supplied from the power houses of the Boston Elevated Railway Co., but it is arranged that in the event of the failure of the Company's power, connection is automatically and immediately made for the supply to come from the Edison Electric Illuminating Co.

APPENDIX B.

[Chap. 741.]

AN ACT RELATIVE TO ELECTRIC RAILWAY TRANSPORTATION FACILITIES IN THE CITY OF BOSTON AND ITS VICINITY.

Be it enacted, etc., as follows:

PART I.

RELATIVE TO THE CONSTRUCTION OF ADDITIONAL TUNNELS OR SUBWAYS IN THE CITY OF BOSTON.

Dorchester Tunnel.

SECTION 1. The Boston transit commission (hereinafter called the commission) shall construct in the city of Boston (hereinafter called the city) a tunnel (hereinafter called the Dorchester tunnel) designed to contain two railway tracks connecting with the tracks in the Park street station of the Cambridge connection, so-called, under Boston Common and Tremont street, and being an extension of said Cambridge connection, forming a continuous route therewith and running under Winter and Summer streets to Dewey square, and thence by such route as may be approved by the commission, to a point at or near the junction of Dorchester avenue and Broadway in South Boston; thence in, under or near Dorchester avenue to a point in, at or near Andrew square in Dorchester, together with stations at or near the corner of Washington street and Summer street, at or near the South station, at or near the corner of Broadway and Dorchester avenue, and in, at or near Andrew square, and passageway connections with the Tremont street subway and the Washington street tunnel and the South station; and the commission in connection therewith may make such alterations or enlargements of the present Park street station of the Tremont street subway, and of the exits and entrances from and to such station, and of the station now being constructed at or near the junction of Park and Tremont streets for the tunnel of the Cambridge connection, so-called, and of the exits and entrances therefrom and thereto, as the commission may deem necessary or advisable.

With the consent of the Boston Terminal Company, the New York, New Haven and Hartford Railroad Company and the Boston and Albany Railroad Company, or with the consent of the board of railroad commissioners (hereinafter called the board), said tunnel may be constructed across or under property owned or occupied by the last named corporations, but in that event said corporations shall be entitled to recover compensation for any injury to their property to the same extent as private persons from whom takings may be made for the purposes of said tunnel.

SECTION 2. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan, signed by the commission, showing the proposed

route, and the general form and method of construction, the location of proposed tracks, stations, approaches and connections, and the alignment and grade, which plan shall be submitted to the Boston Elevated Railway Company (hereinafter called the "company", which term shall be deemed to include its successors or assigns) for its examination, nor until the contract hereinafter mentioned for the use of said Dorchester tunnel has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 3. Within the time and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company, shall execute a contract in writing for the sole and exclusive use of the tunnel by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years and at an annual rental as specified in Part II of this act, and upon such other provisions and conditions not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or, in case of difference, as the board may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the tunnel shall be embodied in and made a part of said contract. The use of the tunnel shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction, including damages, expenses and salaries of the commission and the interest on the debt incurred in construction prior to the beginning of the use, and shall also include all expenses already incurred under the provisions of chapter ninety-four of the resolves of the year nineteen hundred and ten.

SECTION 4. The treasurer of the city of Boston shall from time to time, on request of the commission, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the tunnel provided for by section one of this act. Such bonds shall be designated on their face Dorchester Tunnel Bonds; shall be for such terms not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof shall be used to meet all damages, costs and expenses incurred by the commission or by the city in carrying out the provisions of this act for the construction of the Dorchester tunnel. The proceeds from any sale or sales of lands or rights taken, or acquired by purchase or otherwise under authority of this act for the construction of said tunnel shall be used for the same purpose

as the rentals of said tunnel, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of the tunnel under this act, or for any use of any lands or rights acquired under the provisions of this act for the Dorchester tunnel shall be used in the first instance for the payment of interest on the bonds issued for the cost of said tunnel, and the balance shall be used for the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds prior to the expenditure of such proceeds shall be credited against interest during construction in ascertaining the net cost of the tunnel. The city shall have, hold and enjoy in its private or proprietary capacity, for its own property, the said tunnel and subway and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway or tunnel or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

BOYLSTON STREET SUBWAY.

SECTION 5. The commission shall construct in the city of Boston a subway (hereinafter called the Boylston street subway) so designed as to be adapted to contain two railway tracks, commencing with an open cut at or near the junction of Commonwealth avenue and Beacon street, thence continuing to, in, and under Commonwealth avenue, Charlesgate west, the Fenway, Charlesgate east, Newbury street, crossing under Massachusetts avenue; thence passing under or across private land and land of the city of Boston to a point under Boylston street near Hereford street; thence under Boylston street to a point at or near its junction with Arlington street; thence in and under public ways and public or private lands by such route as the commission may determine, to a point at or near the junction of Boylston street and Tremont street, and thence in or under Tremont street and public lands to a point at or near the Park street station of the Tremont street subway, together with stations at Massachusetts avenue, at Copley square, at or near the corner of Boylston and Tremont streets, and at or near Park street. Instead of constructing said subway as a continuous line from Arlington street to Park street station, the commission may connect said subway at or near the junction of Boylston street and Tremont street with the tracks of the present Tremont street subway, and between that point and the Park street station may either enlarge the present Tremont street subway so as to provide for two additional tracks, or may construct a separate subway adapted to contain two railway tracks, connecting the same with the present Tremont street subway and the tracks located therein.

The cost of enlarging the Tremont street subway, if that is done, or of building said separate subway, as above provided, shall be included in the cost of the Boylston street subway.

Any tunnel or subway construction under, or within one hundred feet of, Boston Common shall be made, so far as is practicable, water

tight, and the work shall be so done as to avoid the drainage of moisture from the surrounding soil, or other injury to the trees; and the commission may construct a suitable system of sub-soil irrigation above or near the line of any section of said subway constructed under the common, or may take any other measures which it may deem expedient for the preservation of the trees, to be paid for as a part of the cost of the subway. The commission shall not erect any additional permanent structures above the surface of the common.

SECTION 6. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan signed by the commission showing the proposed route, and the general form and method of construction, the location of proposed tracks, stations and approaches and the alignment and grade, which plan shall be submitted to the company for its examination, nor until the contract hereinafter mentioned for the use of said Boylston street subway has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 7. Within the time, and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company, shall execute a contract in writing for the sole and exclusive use of the subway by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years, and at an annual rental as specified in Part II of this act, upon such provisions and conditions, not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or in case of difference as the board may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the subway shall be embodied in and made a part of said contract. The use of the subway shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction, including damages, expenses and salaries of the commission, and the interest on the debt incurred in construction prior to the beginning of the use, and shall also include all expenses already incurred in connection with the Riverbank subway authorized by chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven.

SECTION 8. So much of chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven as authorizes the construction of a subway and tunnel to be designated as the Riverbank subway is hereby repealed. The proceeds not already expended of the bonds already issued under section thirteen of said chapter, designated on their face as Boston Riverbank Subway Loan, including any premiums realized from the sale thereof, less the amount of said

proceeds used as specified in section fourteen of this act, shall be used for the same purposes as the proceeds of the bonds authorized by section nine of this act, but no more such Riverbank subway bonds shall be issued after this act takes effect.

SECTION 9. The treasurer of the city of Boston shall, from time to time, on request of the commission, issue and sell, at public or private sale, the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the subway provided for by section five of this act, less the amount of the proceeds of any Riverbank subway bonds not already expended and not used as specified in section fourteen of this act. Such bonds shall be designated on their face as Boylston Street Subway Bonds, shall be for such terms, not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest, payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof, shall be used to meet all damages, costs and expenses incurred by the commission or by the city in carrying out the provisions of this act for the construction of the Boylston street subway. The proceeds of any sale or sales of land or rights taken, or acquired by purchase or otherwise, under the provisions of this act for the construction of said subway shall be used for the same purposes as the rentals of said subway, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of said subway under this act, or for any use of any lands or rights acquired under the provisions of this act for the Boylston street subway, shall be used in the first instance for the payment of interest on the bonds issued for the cost of said subway, and on the Riverbank subway bonds, and the balance shall be used for the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds, prior to the expenditure of such proceeds, shall be credited against interest during construction in ascertaining the net cost of the said subway. The city shall have, hold and enjoy in its private or proprietary capacity for its own property the said tunnel and subway and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway or tunnel or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

EAST BOSTON TUNNEL EXTENSION.

SECTION 10. The commission shall extend the East Boston tunnel by constructing a tunnel and subway (to be designated as the East Boston tunnel extension) connecting with the existing East Boston tunnel at grade or otherwise, so designed as to be adapted to contain two railway tracks, beginning at or near the present terminus of the East Boston tunnel in Court street near Scollay square; thence under Court street to and through Scollay square; thence under Tremont

Row and under Court street to, under and through Bowdoin square, and thence under Cambridge street to a suitable connection with surface tracks in Cambridge street at a point at or near Lynde street, or at or near North Russell street, or between said streets, together with a station in or near Scollay square and a station in or near Bowdoin square, and with suitable approaches, sidings, entrances, elevators, inclines, connections and other structures; and the commission may, with the consent of the company, make any changes which it deems necessary or expedient in the existing subway and tunnel and such alterations or enlargements in the existing subway station in Scollay square and Court street and in the exits and entrances therefrom and thereto as it may deem necessary or expedient. To provide for the connection of the tunnel extension with the surface tracks in Cambridge street, the commission, acting for this purpose in place of, and with all the powers of the board of street commissioners of the city of Boston and of the officer authorized to construct streets by chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, may widen, alter and construct Cambridge street in such manner as the commission may deem necessary or advisable, and may assess betterments for the improvement under section five of said chapter.

SECTION 11. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan signed by the commission showing the proposed route or the location thereof, and the general form and method of construction, the location of proposed tracks, stations and approaches, and the alignment and grade, which plan shall be submitted to the company for its examination, nor until the contract hereinafter mentioned for the use of said East Boston Tunnel extension has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 12. Within the time and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company shall execute a contract in writing for the sole and exclusive use of the East Boston tunnel extension by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years and at an annual rental as specified in Part II of this act, upon such provisions and conditions not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or, in case of difference, as the board may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the tunnel extension shall be embodied in and made a part of said contract. The use of the tunnel extension shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as

is otherwise provided herein, all expenditures incurred in acquisition and construction and in making necessary changes in the East Boston tunnel, including damages, expenses (except damages and all other expenses for lands and rights in lands, or otherwise incurred, for the widening of Cambridge street, one half of which damages and expenses, less the betterments the city shall pay, in the same manner as for other work done under said chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, and one half of which shall be considered as part of the cost of the tunnel extension and be paid for out of the proceeds of bonds issued under section thirteen), and salaries of the commission and the interest on the debt incurred in construction prior to the beginning of the use.

SECTION 13. The treasurer of the city of Boston shall, from time to time, on the request of the commission, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the tunnel and subway provided for by section ten of this act. Such bonds shall be designated on their face East Boston Tunnel Extension Bonds; shall be for such terms, not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof, shall be used to meet all damages, costs and expenses incurred by the commission or by the city, except as aforesaid, in carrying out the provisions of this act relative to the construction of the said tunnel extension. The proceeds of any sale or sales of lands or rights taken or otherwise acquired under authority of this act for the construction of said tunnel extension (except lands and rights in land taken or purchased for the widening of Cambridge street, which shall be applied in reduction of the damages and expenses incurred for said widening), shall be used for the same purpose as the rentals of said tunnel extension, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of said tunnel extension under this act, and for any use of any lands or rights acquired under authority of this act for said tunnel extension, except as aforesaid, shall be used in the first instance for the payment of interest on the bonds issued for the cost of said tunnel extension, and the balance shall be applied to the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds, prior to the expenditure of such proceeds, shall be credited against interest during construction in ascertaining the net cost of the said tunnel extension. The city shall have, hold and enjoy in its private or proprietary capacity, for its own property, the said subway and tunnel extension, and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway and tunnel extension or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

GENERAL PROVISIONS.

SECTION 14. The commission shall, immediately after the passage of this act, make such preliminary investigations, surveys and plans as it may deem expedient, and to that end may enter upon any lands, and place and maintain marks therein, and may make excavations and borings, and do all other acts necessary for such investigations and surveys, and may expend such sums as it deems necessary therefor. The expenses incurred in making such preliminary investigations, surveys and plans to an amount not exceeding fifty thousand dollars shall be paid from the proceeds of the Riverbank subway bonds. Upon the construction of the respective tunnels and subways herein provided for such expenses shall be deemed a part of the cost thereof, and shall be charged to the respective subways and tunnels for which the expense was incurred.

SECTION 15. The construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, hereinbefore authorized, shall be begun, in each respective case, immediately after the contract for the use of such tunnel or subway has been executed by the commission and the company.

SECTION 16. In connection with the construction of any tunnel or subway authorized by this act the commission may, for the purpose of avoiding objectionable curves or any practical or legal obstacles, vary or alter the routes herein respectively prescribed for the tunnels and subways, and for the said purposes may locate the tunnels, subways and stations or any of them, in whole or in part, on private or public lands. The commission may also, in connection with any tunnel or subway, construct such approaches, sidings, spur tracks, loops, entrances, inclines, elevators, connections and other structures as it may deem necessary. The commission may, with the consent of the company, make such alterations in the existing tunnels and subways, including stations and exits and entrances thereof, as it may deem necessary or advisable.

SECTION 17. The commission may make contracts in the name of the city for the work herein authorized, but all contracts involving two thousand dollars or more in amount shall be in writing and signed by a majority of the commission; and no such contract shall be altered except by an instrument in writing, signed by the contractor and a majority of the commission, and also by the sureties, if any, on the bond given by the contractor for the completion of the original contract. No such contract, and no alteration of any such contract, shall be valid or binding on the city unless executed in the manner aforesaid.

SECTION 18. All work done under this act, under or near public streets and places shall be conducted, so far as may be practicable, in such manner as to leave such streets and places, or a reasonable part thereof, open for traffic between the hours of seven in the forenoon and six in the afternoon of each secular day, except legal holidays.

SECTION 19. The commission may, for the purposes of this act, use public ways and lands without compensation therefor, and may

take, or acquire by purchase or otherwise for the city, lands in fee, and easements, estates and rights in land, including the right to go under the surface thereof or through or under buildings or parts of buildings thereon; and such taking in fee or otherwise may be made whether the lands taken or otherwise affected are held under or by title derived under eminent domain or otherwise, and may be made for the purpose of providing locations for pipes, wires, conduits, and other structures the relocation of which is made necessary or expedient by the construction of any subway or tunnel authorized by this act. A taking under this section of an easement or other estate or right in a given parcel of real estate, whether such parcel consists of unimproved land or of land and buildings, may be confined to a portion or section of such parcel fixed by planes or other surfaces of division, below, above, or at the surface of the soil; and in such case no taking need be made of upper or lower portions or sections, except of such easements therein, if any, as the commission may deem necessary. The commission, to make any taking by right of eminent domain, shall cause to be recorded in the registry of deeds for the county of Suffolk a description of the lands, easements, estates or rights to be taken, as certain as is required in a common conveyance of land, with the statement that the same are taken under authority of this act, which description and statement shall be signed by the commission; and the lands, easements, estates or rights therein described shall upon such recording be taken for and shall vest in the city. The commission shall, so far as may be practicable, notify all known owners of such taking, but the validity thereof shall not be affected by want of such notice.

SECTION 20. The commission may sell the buildings and other structures upon any lands acquired by it, or may remove the same; and shall sell, if a sale be practicable, or if not shall lease, any lands, or rights or interests in land or other property acquired for the purposes of this act, whenever the same shall, in the opinion of the commission, cease to be needed for such purposes. The proceeds of such sales and leases, and the fair valuation of any such lands or other property no longer needed for the said purposes, but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board, shall be deducted from the cost of the tunnel or subway for the construction of which such lands or other property were acquired, for the purpose of ascertaining the rental thereof.

SECTION 21. The commission shall determine and award the damages sustained by any person by reason of property taken or injured by the commission under authority of this act, except public ways or lands, and may agree with any such person as to the amount of his damages, which amount the city shall be liable to pay. If any such person is dissatisfied with such award, or cannot agree with the commission upon his damages, the same may be determined by a jury in the superior court for the county of Suffolk, on petition therefor of such person, or of the commission, against the city, filed in the clerk's office within

one year after the property is taken, entered on, or injured; and judgment shall be entered upon the determination of the jury and costs shall be taxed and execution issued in favor of the prevailing party as in civil cases. The members of the commission shall not be liable personally for any such damage. The provisions of sections seventeen to twenty-five, inclusive, and of section one hundred and fourteen of chapter forty-eight of the Revised Laws, relating to procedure in case of damage to estates in which several parties have different or several interests shall apply to proceedings in such cases under this act.

SECTION 22. The commission may order the temporary removal or relocation of any surface tracks, and the temporary or permanent removal or relocation of any conduits, pipes, wires, poles or other property of any person or corporation which it deems to interfere with the construction or operation of any tunnel or subway authorized by this act, and shall grant new locations for any such structures so removed or relocated. Such orders, to the extent specified therein, shall be deemed a revocation of the right or license to maintain such tracks, conduits, pipes, wires, poles or other property, and the owner of any such structures in public ways or lands shall comply with the said orders without expense to the city. If any such owner shall fail to comply with the order of the commission within a reasonable time, to be fixed in the order, the commission may discontinue and remove such tracks, conduits, pipes, wires, poles or other property, and may relocate the same, and the cost of such discontinuance, removal or relocation shall be repaid to the city by the owner. No such discontinuance, removal or relocation shall entitle the owner of the property thus affected to any damages on account thereof. Any such structures in or upon private lands may be removed and relocated by the commission, or if removed and relocated by the owner thereof, the reasonable expense shall be paid to him by the commission. Any gas or electric lighting company may shut off the gas or current from any pipes or wires affected by any acts done hereunder, so far as may be necessary to avoid danger of escape or explosion of gas, or other public danger.

SECTION 23. Debts incurred by the city for the construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, including the widening of Cambridge street authorized by this act, shall not be considered in determining the statutory limit of indebtedness of the city.

SECTION 24. The company, for the equipment of the tunnels and subways authorized by this act, and for all expenditures by the company required or authorized hereby, from time to time, in the manner and subject to the requirements prescribed by law, may issue and dispose of such amounts of its capital stock or bonds, or of each, at its option, in addition to the amounts heretofore authorized, as may be necessary therefor.

In respect to the equipment, use and operation of the railway to be located in the tunnels and subways and transportation therein, the company shall have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in

general and special laws now or hereafter in force applicable to it. To provide for proper connections of the tracks in any subway or tunnel authorized by this act with surface tracks, the company may make such alterations or extensions of its surface tracks and appurtenances as the board may approve.

SECTION 25. Upon the determination by the commission of any important question relating to any plan or work herein provided for, except an award of or agreement upon damages, as provided in section twenty-one hereof, the company may, within three days after notice of such determination, apply to the board for a revision of the same, and thereupon the board may consider and finally determine such question.

SECTION 26. The supreme judicial court and the superior court, upon application of any party in interest, including the city, the commission, the company or any ten taxable inhabitants of the city, may enforce or prevent violation of the foregoing provisions of this act by any appropriate process.

PART II.

RELATIVE TO CONTRACTS FOR THE USE OF SUBWAYS AND TUNNELS WITHIN THE CITY OF BOSTON

SECTION 27. The contract for the use of the Tremont street subway, so-called, shall be extended for a term beginning with the expiration of said present contract and ending on the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions stated in said existing contract, except as is otherwise provided herein. The rental, from and after the expiration of the present contract, shall be a sum equal to four and one half per cent per annum on the net cost of said Tremont street subway.

SECTION 28. The lease of the East Boston tunnel to the Boston Elevated Railway Company shall be extended from the tenth day of June, nineteen hundred and twenty-two, until the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions contained in the existing lease, except as is otherwise hereinafter expressly provided. The rental, after the tenth day of June, nineteen hundred and twenty-two, shall be a sum equal to four and one half per cent per annum on the net cost of the tunnel. The provision for the collection of tolls from passengers using the tunnel shall be eliminated from such extension.

SECTION 29. The contract with the Boston Elevated Railway Company for the use of the Washington street tunnel shall be extended from the expiration of the present contract, on the thirtieth day of November, nineteen hundred and thirty-three, until the first day of July, nineteen hundred and thirty-six, such extension to be upon the same terms and conditions as are contained in the present contract, except as is otherwise provided hereinafter. The rental during such

extension shall be at the rate of four and one half per cent per annum upon the net cost of the tunnel.

SECTION 30. The contract to be made with the Boston Elevated Railway Company for the use of the tunnel of the Cambridge connection, so-called, under the provisions of section twenty-three of chapter five hundred and twenty of the acts of the year nineteen hundred and six, shall be for a term ending on the first day of July, nineteen hundred and thirty-six. The rental for a period of twenty years from the opening for use of the said tunnel shall be four and seven eighths per cent per annum upon the net cost of the tunnel, and thereafter until the first day of July, nineteen hundred and thirty-six, shall be at the rate of four and one half per cent per annum upon its net cost.

SECTION 31. The contract for the use of the Dorchester tunnel to be made with the Boston Elevated Railway Company, as provided in sections three and thirty-eight of this act, shall be for a term ending on the first day of July, nineteen hundred and thirty-six, and the rental shall be at the rate of four and one half per cent per annum upon the net cost of the said tunnel.

SECTION 32. The contract for the use of the Boylston street subway to be made with the Boston Elevated Railway Company, as provided in sections seven and thirty-eight of this act, shall be for a term ending on the first day of July, nineteen hundred and thirty-six, and the rental shall be at the rate of four and one half per cent per annum upon the net cost of the said subway.

SECTION 33. The contract for the use of the East Boston tunnel extension to be made with the Boston Elevated Railway Company, as provided in sections twelve and thirty-eight of this act, shall be for a term ending on the first day of July, nineteen hundred and thirty-six, and the rental shall be at the rate of four and one half per cent per annum upon the net cost of the said extension.

SECTION 34. All contracts for the use of the several subways and tunnels provided for in sections twenty-seven, twenty-eight, twenty-nine, thirty, thirty-one, thirty-two and thirty-three of this act shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of the city, approved by the board of railroad commissioners. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

SECTION 35. The words "consolidated transit loan" as used in this act shall mean the bonds which have now been, or may hereafter be, issued by the city of Boston to pay for the construction of the Tremont street subway, the East Boston tunnel, the Washington street tunnel, the tunnel of the Cambridge connection, so-called, the proposed Dorchester tunnel, the proposed Boylston street subway, and the proposed East Boston tunnel extension, and also the bonds issued under authority of chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven.

Subject to the requirements of existing acts, the rentals of all said subways and tunnels are hereby pledged to secure the payment of the principal and interest of the consolidated transit loan. All bonds hereafter issued by the city of Boston to provide for the construction of tunnels and subways shall be for such a term of years, not less than thirty years and not exceeding forty-five years, as the city treasurer of the city with the approval of the mayor may fix: *provided, however*, that before the term of any of such bonds shall be fixed at less than forty-five years, the city treasurer shall file with the city clerk a certificate that in his opinion the sinking funds provided for the retirement of the consolidated transit loan will be adequate to provide for the payment of such bonds at the maturity thereof.

The treasurer of the city of Boston may at any time, with the written approval of the mayor, issue bonds payable in installments, as provided in section twenty-six of chapter four hundred and eighty-six of the acts of the year nineteen hundred and nine, instead of sinking fund bonds as above provided.

SECTION 36. In order to provide for the abolition at the earliest possible date of the toll required of passengers using the East Boston tunnel, and in order to provide for the payment of the bonds issued for the Washington street tunnel, the rental received from the proposed Dorchester tunnel, from the proposed Boylston street subway and from the proposed East Boston tunnel extension, if the same shall be constructed, over and above the amount required to pay the interest on the bonds issued therefor, and the rental received from the Tremont street subway, over and above the amount required to meet the interest and sinking fund requirements of the bonds issued therefor, shall, in addition to the rental payable by the Boston Elevated Railway Company under the lease of the East Boston tunnel, be applied to meet the interest and sinking fund requirements of the bonds issued for the construction of the East Boston tunnel; and in so far as such rentals may not be required for that purpose they shall be applied, in addition to the rental payable for the Washington street tunnel, to meet the interest and sinking fund requirements of the bonds issued for the construction of said Washington street tunnel.

SECTION 37. The excess rentals of the East Boston tunnel, the Tremont street subway, the Washington street tunnel, the proposed Dorchester tunnel, the proposed Boylston street subway and the proposed East Boston tunnel extension, if the same shall be built, not needed to provide for the interest and sinking fund requirements speci-

fied in the preceding section, and any rental of the tunnel of the Cambridge connection, so-called, not needed to provide for the interest and sinking fund requirements of the bonds issued therefor, shall be applied, so far as may be necessary to meet the interest, sinking fund and installment requirements of the other bonds constituting the consolidated transit loan.

SECTION 38. Within ninety days after this act takes full effect the commission, acting on behalf of the city of Boston, and the Boston Elevated Railway Company shall execute a contract upon the terms and conditions hereinbefore prescribed for the use of the proposed Dorchester tunnel authorized by section one of this act; and shall likewise, within the same period, execute a contract upon the terms and conditions hereinbefore stated for the use of the proposed Boylston street subway authorized by section five of this act; and shall likewise, within the same period, execute a contract upon the terms and conditions hereinbefore prescribed for the use of the proposed East Boston tunnel extension authorized by section ten of this act; and shall likewise within the same period, execute a contract for the use of the tunnel of the Cambridge connection, so-called, upon the terms and upon the conditions hereinbefore prescribed, unless such contract has already been executed upon the terms and upon the conditions prescribed by law at the date of such execution, and, in case such contract has already so been executed, shall execute alterations of the same, readjusting the terms and conditions thereof so as to conform to the terms and conditions prescribed in this act; and shall likewise, within the same period, execute extensions of the existing contracts for the use of the Tremont street subway, of the East Boston tunnel, and of the Washington street tunnel, all upon the terms and upon the conditions hereinbefore prescribed.

SECTION 39. The contracts and extensions of contracts for the use of the several tunnels and subways executed in accordance with the authority conferred by this act shall not in any respect impair any right which the commonwealth or the city of Boston or any other licensee of the commonwealth may at any time have to take the railway properties of the Boston Elevated Railway Company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of such contracts or extensions of contracts, nor shall it be diminished because of the fact that without such contracts or extensions of contracts the connection between different parts of said properties might be cut off.

SECTION 40. The use and control of the tunnels and subways specified in this act shall be held by the Boston Elevated Railway Company subject to the rights, if any, which the West End Street Railway Company may have under the provisions of Article II of its lease to the Boston Elevated Railway Company dated December nine, eighteen hundred and ninety-seven, as modified in accordance with law.

SECTION 41. Section fourteen of Part I of this act shall take effect upon its passage. The remaining provisions of this act shall not take effect until it shall have been accepted both by vote of the city council of the city of Boston, approved by the mayor, and by the Boston Ele-

vated Railway Company by vote of its board of directors. Such acceptances shall be evidenced by certificates thereof filed with the secretary of the commonwealth. If the act is not so accepted by the Boston Elevated Railway Company and by the city of Boston within fifteen days after the West End Street Railway Company shall, at a meeting of stockholders specially called for the purpose, have voted upon the question whether or not it shall sell its property, privileges and franchises to the Boston Elevated Railway Company, as provided in chapter of the acts of the year nineteen hundred and eleven, this act shall become void. [*Approved July 20, 1911.*]

APPENDIX C.

DORCHESTER TUNNEL.

THE CONTRACT FOR THE USE OF THE DORCHESTER TUNNEL.

I.—This contract made this seventh day of December ^{Parties.} in the year nineteen hundred and eleven by and between the city of Boston, hereinafter called the city, acting by the Boston Transit Commission, hereinafter called the commission, under and by virtue of an act of the Commonwealth of Massachusetts entitled "An Act Relative to Electric Railway Transportation Facilities in the City of Boston and its Vicinity," being chapter seven hundred and forty-one of the acts of the year nineteen hundred and eleven, hereinafter called the act, and the Boston Elevated Railway Company, hereinafter called the company, witnesseth as follows: ^{St. 1911, c. 741.}

II.—The city, pursuant to the act and in consideration ^{Grant.} of the covenants and agreements herein contained, grants to the company the sole and exclusive use of the Dorchester tunnel, hereinafter called the premises, as defined in the act, ^{Premises.} and to be constructed under authority thereof, for the running of its cars therein and such other uses as are hereinafter ^{St. 1911, c. 741, s. 3.} specified. ^{Uses.}

III.—The use shall begin when in the opinion of the commission a reasonable time after completion has been ^{Beginning of Use.} allowed for equipment. ^{St. 1911, c. 741, s. 3.}

IV.—The term of years of the use shall extend from the ^{Term.} beginning of the use to the first day of July, nineteen hundred and thirty-six, and thereafter is to continue unless or until ^{St. 1911, c. 741, s. 31.} terminated as follows:

All contracts for the use of the Tremont street subway, ^{St. 1911, c. 741, s. 34.} the East Boston tunnel, the Washington street tunnel,

the tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of the city, approved by the board of Railroad Commissioners, hereinafter called the board. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.
St. 1911, c. 741,
s. 31.

V.—The rental shall be at the rate of four and one-half per cent. per annum upon the net cost.

St. 1911, c. 741,
s. 3.

St. 1911, c. 741,
s. 20.

St. 1911, c. 741,
s. 4.

St. 1911, c. 741,
s. 20.

The net cost shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction including damages, expenses and salaries of the commission, and the interest on the debt incurred in construction prior to the beginning of the use and also all expenses incurred under the provisions of chapter ninety-four of the resolves of the year nineteen hundred and ten, prior to the date when the act took effect. For the purpose of ascertaining the rental there shall be deducted from the cost the proceeds of sales and leases of lands, rights, or interests in lands or other property acquired by the commission in connection with the construction of the premises, and the proceeds of sales or leases of buildings or other structures upon lands so acquired, and the fair valuation of any such lands and other property no longer needed for the purposes

of the Dorchester tunnel but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board. Any interest received by the city upon the proceeds of the bonds issued by it prior to the expenditure of such proceeds shall be credited against interest during construction in ascertaining the net cost. ^{St. 1911, c. 741, s. 4.}

The rental shall begin when the use begins.

The rental shall be paid to the city in quarterly payments on the last day of December, March, June and September in each year and at the rate aforesaid for any uncompleted quarter of a year.

If at any time during the continuance of the term of this contract the company shall be deprived in whole or in part of the use of the premises by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises, then the rental or a just and reasonable part thereof, as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, shall be suspended or abated during such deprivation.

VI.—The company shall suitably lay and maintain in ^{Equipment.} first-class condition railway tracks in proper places in the premises, together with the appointments and apparatus necessary for the safe and convenient operation of the same and shall provide and maintain all wires, electrical or other apparatus or equipment necessary or convenient for the furnishing of power and light therein and shall further provide requisite pumps, fans and ventilating apparatus and in general shall completely equip and furnish the premises with all machinery, piping, apparatus and furniture proper and

adapted thereto and necessary for the convenient maintenance and operation of a railway therein and for the safety and accommodation of the passengers upon such railway.

All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

Repairs.

VII.—The company shall maintain the premises except as to repairs below excepted, in good order and condition as a structure complete so far as consistent with the provisions of the act, and adapted to the maintenance and use of lines of railway, and shall at all reasonable times be entitled to a permit to open the streets and other public grounds of the city for the purpose of making requisite repairs to the premises, and when the right of the company or its assigns to use the premises shall terminate shall restore them to the city in good condition except as to repairs not obligatory upon the company.

All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; and if repairs shall be made necessary by any of said excepted causes then such repairs shall be

made by the company and the reasonable cost and expense thereof deducted from the rental subsequently payable.

VIII.—The city shall not be responsible to the company ^{Liability for damages.} for damages of any description resulting from any defects in the premises, whether structural or arising out of want of repair or from any cause after the use of the same by the company has begun as hereinbefore provided, unless such damage result from the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; nor shall it be responsible for any damages resulting to persons or property in the operation and use of the premises, including all parts thereof, whether on property belonging to the city or upon property the fee of which belongs to other parties, and the company shall hold the city harmless and indemnified therefrom and shall at its own expense upon due notice from the city defend all suits and other proceedings of every description, whether at law or in equity, which may be brought against the city, its officers, servants or agents by reason of any liability arising out of the operation and use of any portion of the premises or of the railways, machinery and apparatus therein and accruing after the right to use such portion has begun as herein provided, and shall satisfy all final judgments of legal tribunals rendered in such suits and proceedings. The foregoing provisions shall not be construed to impose any liability or obligation upon the company for any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises.

IX.—The company shall keep the premises thoroughly ^{Premises to be kept clean.} clean and free from unnecessary dampness, and the approaches to stations clean and free from ice and snow. When

the premises are in use it shall suitably light the same in all parts, and by means of artificial ventilation shall keep the air adequately pure for health and comfort.

**Changes in
Premises.**

X.—The company within the limitations of the act may make such alterations in or additions to the premises as may be approved by the commission.

Sundry uses.

XI.—To the extent of the power of the company so to do and the power of the commission to contract therefor, the company may place and maintain in the premises booths for the sale of newspapers, magazines, periodicals and books, and in places specially adapted therefor may place or admit unobjectionable advertisements, and may make such other uses of the premises, not impairing the use for transportation of passengers, as the board may from time to time approve; provided however that such booths and advertisements shall not be so placed or used as to diminish or impair the safety, accommodation, convenience or comfort of passengers using the premises; and the company agrees that upon receipt of notice in writing at any time or from time to time from the board that in its opinion any of the uses above referred to or approved, either in whole or in part, in any way diminish or impair such safety, accommodation, convenience or comfort or conflict in any way with the best interests of the public, it will forthwith to the extent specified in the notice discontinue such use.

**Newspaper
booths and
advertisements**

**Wires, conduits
and tubes.**

XII.—The company, upon such terms as it may deem expedient, may permit any person or corporation not authorized to carry on a railway business but authorized to use and maintain wires, conduits, tubes or similar structures along the route of the premises, to place such wires, conduits, tubes or similar structures within a corresponding portion of the premises used by the company, but only to such extent and for such time as may be practicable without interfering with the safe and convenient operation of the railway and other apparatus which the company is hereby authorized to put therein, but the privilege shall not extend to gas or water pipes.

Except as above provided the company shall not have the right to place in the premises or attach thereto any structures, machinery, merchandise, apparatus, advertisements or property of any sort which are not necessary or

proper for the operation of its railway therein and the performance of its agreements herein contained.

XIII.—The city may place in the premises such wires and apparatus as may be necessary for its police and fire-alarm service, to be used however exclusively for such service and to be so located as not to interfere with the use of the premises which the company is hereby authorized to make. The location, construction, maintenance and repair of such wires and apparatus shall be subject to such reasonable directions and regulations as the company may impose or in case of any disagreement as the board may determine.

Police and
Fire Alarm
Service.

XIV.—In the event of the failure of the company or its assigns to pay the rental for three months after such rental shall have become due, or in the event of a failure to maintain and operate a railway within the premises, and if such failure shall have continued for three months, then in either of said events the city upon three months' notice, such default still continuing, shall have the right to terminate this contract and to re-enter upon and repossess itself of the premises, unless such failure to maintain and operate grows out of the act of God, of public enemies, of mobs or of riots; or grows out of works or excavations carried on or permitted by the city or other public authority; or grows out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or grows out of the location, maintenance or use of the wires or other apparatus which the city is herein authorized to maintain in the premises. In case the right of re-entry and re-possession above given shall be exercised, all the tracks, wires, apparatus, equipment and other property in the nature of fixtures of the company or its assigns within the premises may be taken by the city and be paid for by it at a valuation to be determined as herein provided for the occasion when the same are to be surrendered by the company at the expiration of the term of this contract.

Default and
penalty.

**Removal of
property by
railway com-
pany.**

XV.—The company shall have no right at any time to remove from the premises any tracks, wires, apparatus, equipment or other property necessary to the use and maintenance of the premises and the operation of a railway therein, except for the purpose of repairs or renewal or for the substitution of equivalent structures, property, apparatus or equipment.

**Inspection by
public officials.**

XVI.—The governor of the commonwealth, the mayor and commissioner of public works of the city, and the members of the board and of the commission, and their respective engineers shall at all times have free entry to the premises for the purpose of inspecting the same.

Arbitration.

XVII.—In case of disagreement between the city acting by its mayor and the company as to the amount due for rental, or as to the suspension or abatement thereof as herein provided, or as to the valuation of the property upon the termination of the use herein contracted for, the matter in dispute shall be left to the decision of three persons, one to be selected by the mayor of the city, one to be selected by the company and the third by the two thus chosen. The report of the arbitrators or the majority of them shall be binding upon the parties hereto.

**Termination of
the existence of
the Commis-
sion.**

XVIII.—In respect of all matters arising under this contract where provision is made for action by the commission or its approval of acts to be done by the company is required, it is provided and agreed that upon the termination of the existence of the commission the authority to take such action shall vest in the city, which shall have all the rights, powers and privileges and be subject to all the duties, restrictions and liabilities herein conferred or imposed upon the commission in respect thereof; such powers to be exercised by the mayor, commissioner of public works and city treasurer in place of the commission or by such other officers as the city council may prescribe.

**The Company
to be subject to
law.**

XIX.—With respect to the equipment, use and operation of the railway to be located in the premises and transportation thereon, the company is to have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws which now are or hereafter may be in force applicable to it.

XX.—The use and control of the premises under this contract is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law.

Rights of
West End
Street Railway
Company.
St. 1911, c. 741,
s. 40.

XXI.—This contract shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may at any time have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this contract nor shall it be diminished because of the fact that without this contract the connection between different parts of said properties might be cut off.

Right of Com-
monwealth or
City to Take by
Eminent
Domain.

XXII.—The recital of any provision of the act in the body of this contract shall not be deemed to convey any implication that any other provision thereof is not equally a part of the contract, and it is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the act in the form and as approved on the twentieth day of July, nineteen hundred and eleven, is and shall be void and of no effect.

Controlling
Effect of the
Act.

XXIII.—The following is a copy of those sections of Part I of the act, the provisions of which, in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the premises, are embodied in and made part of this contract, as required by the act.

Copy of Certain
Provisions
of the Act.
St. 1911, c. 741,
s. 4.

[Chap. 741, Acts of 1911.]

AN ACT RELATIVE TO ELECTRIC RAILWAY TRANSPORTATION FACILITIES IN THE CITY OF BOSTON AND ITS VICINITY.

Dorchester Tunnel.

SECTION 1. The Boston transit commission (hereinafter called the commission) shall construct in the city of Boston (hereinafter called the city) a tunnel (hereinafter called the Dorchester tunnel) designed to contain two railway tracks connecting with the tracks in the Park street station of the Cambridge connection, so-called, under Boston Common and Tremont street, and being an extension of said Cambridge connection, forming a continuous route therewith and running under Winter and Summer streets to Dewey square, and thence by such route as may be approved by the commission, to a point at or near the junction of Dorchester avenue and Broadway in South Boston; thence in, under or near Dorchester avenue to a point in, at or near Andrew square in Dorchester, together with stations at or near the corner of Washington street and Summer street, at or near the South station, at or near the corner of Broadway and Dorchester avenue, and in, at or near Andrew square, and passageway connections with the Tremont street subway and the Washington street tunnel and the South station; and the commission in connection therewith may make such alterations or enlargements of the present Park street station of the Tremont street subway, and of the exits and entrances from and to such station, and of the station now being constructed at or near the junction of Park and Tremont streets for the tunnel of the Cambridge connection, so-called, and of the exits and entrances therefrom and thereto, as the commission may deem necessary or advisable.

With the consent of the Boston Terminal Company, the New York, New Haven and Hartford Railroad Company and the Boston and Albany Railroad Company, or with the consent of the board of railroad commissioners (hereinafter called the board), said tunnel may be constructed across or under property owned or occupied by the last named corporations, but in that event said corporations shall be entitled to recover compensation for any injury to their property to the same extent as private persons from whom takings may be made for the purposes of said tunnel.

SECTION 2. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan, signed by the commission, showing the proposed route, and the general form and method of construction, the location of proposed tracks, stations, approaches and connections, and the alignment and grade, which plan shall be submitted to the Boston Elevated Railway Company (hereinafter called the "company", which term shall be deemed to include its successors or assigns) for its examination, nor until the contract hereinafter mentioned for the use of said Dorchester tunnel has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 3. Within the time and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company, shall execute a contract in writing for the sole and exclusive use of the tunnel by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years at an annual rental as specified in Part II of this act, and upon such other provisions and conditions not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or, in case of difference, as the board may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the tunnel shall be embodied in and made a part of said contract. The use of the tunnel shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction, including damages, expenses and salaries of the commission and the interest on the debt incurred in construction prior to the beginning of the use, and shall also include all expenses already incurred under the provisions of chapter ninety-four of the resolves of the year nineteen hundred and ten.

SECTION 4. The treasurer of the city of Boston shall from time to time, on request of the commission, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the tunnel provided for by section one of this act. Such bonds shall be designated on their face *Dorchester Tunnel Bonds*; shall be for such terms not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof shall be used to meet all damages, costs and expenses incurred by the commission or by the city in carrying out the provisions of this act for the construction of the *Dorchester tunnel*. The proceeds from any sale or sales of lands or rights taken, or acquired by purchase or otherwise under authority of this act for the construction of said tunnel shall be used for the same purpose as the rentals of said tunnel, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of the tunnel under this act, or for any use of any lands or rights acquired under the provisions of this act for the *Dorchester tunnel* shall be used in the first instance for the payment of interest on the bonds issued for the cost of said tunnel, and the balance shall be used for the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds prior to the expenditure of such proceeds shall be

credited against interest during construction in ascertaining the net cost of the tunnel. The city shall have, hold and enjoy in its private or proprietary capacity, for its own property, the said tunnel and subway and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway or tunnel or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

* * * * *

SECTION 14. The commission shall, immediately after the passage of this act, make such preliminary investigations, surveys and plans as it may deem expedient, and to that end may enter upon any lands, and place and maintain marks therein, and may make excavations and borings, and do all other acts necessary for such investigations and surveys, and may expend such sums as it deems necessary therefor. The expenses incurred in making such preliminary investigations, surveys and plans to an amount not exceeding fifty thousand dollars shall be paid from the proceeds of the Riverbank subway bonds. Upon the construction of the respective tunnels and subways herein provided for such expenses shall be deemed a part of the cost thereof, and shall be charged to the respective subways and tunnels for which the expense was incurred.

SECTION 15. The construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, hereinbefore authorized, shall be begun, in each respective case, immediately after the contract for the use of such tunnel or subway has been executed by the commission and the company.

SECTION 16. In connection with the construction of any tunnel or subway authorized by this act the commission may, for the purpose of avoiding objectionable curves or any practical or legal obstacles, vary or alter the routes herein respectively prescribed for the tunnels and subways, and for the said purposes may locate the tunnels, subways and stations or any of them, in whole or in part, on private or public lands. The commission may also, in connection with any tunnel or subway, construct such approaches, sidings, spur tracks, loops, entrances, inelines, elevators, connections and other structures as it may deem necessary. The commission may, with the consent of the company, make such alterations in the existing tunnels and subways, including stations and exits and entrances thereof, as it may deem necessary or advisable.

SECTION 17. The commission may make contracts in the name of the city for the work herein authorized, but all contracts involving two thousand dollars or more in amount shall be in writing and signed by a majority of the commission; and no such contract shall be altered except by an instrument in writing, signed by the contractor and a majority of the commission, and also by the sureties, if any, on the bond given by the contractor for the completion of the original contract. No such contract, and no alteration of any such contract, shall be valid or binding on the city unless executed in the manner aforesaid.

SECTION 18. All work done under this act, under or near public streets and places shall be conducted, so far as may be practicable, in such manner as to leave such streets and places, or a reasonable part

thereof, open for traffic between the hours of seven in the forenoon and six in the afternoon of each secular day, except legal holidays.

SECTION 19. The commission may, for the purposes of this act, use public ways and lands without compensation therefor, and may take, or acquire by purchase or otherwise for the city, lands in fee, and easements, estates and rights in land, including the right to go under the surface thereof or through or under buildings or parts of buildings thereon; and such taking in fee or otherwise may be made whether the lands taken or otherwise affected are held under or by title derived under eminent domain or otherwise, and may be made for the purpose of providing locations for pipes, wires, conduits, and other structures the relocation of which is made necessary or expedient by the construction of any subway or tunnel authorized by this act. A taking under this section of an easement or other estate or right in a given parcel of real estate, whether such parcel consists of unimproved land or of land and buildings, may be confined to a portion or section of such parcel fixed by planes or other surfaces of division, below, above, or at the surface of the soil; and in such case no taking need be made of upper or lower portions or sections, except of such easements therein, if any, as the commission may deem necessary. The commission, to make any taking by right of eminent domain, shall cause to be recorded in the registry of deeds for the county of Suffolk a description of the lands, easements, estates or rights to be taken, as certain as is required in a common conveyance of land, with the statement that the same are taken under authority of this act, which description and statement shall be signed by the commission; and the lands, easements, estates or rights therein described shall upon such recording be taken for and shall vest in the city. The commission shall, so far as may be practicable, notify all known owners of such taking, but the validity thereof shall not be affected by want of such notice.

SECTION 20. The commission may sell the buildings and other structures upon any lands acquired by it, or may remove the same; and shall sell, if a sale be practicable, or if not shall lease, any lands, or rights or interests in land or other property acquired for the purposes of this act, whenever the same shall, in the opinion of the commission, cease to be needed for such purposes. The proceeds of such sales and leases, and the fair valuation of any such lands or other property no longer needed for the said purposes, but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board, shall be deducted from the cost of the tunnel or subway for the construction of which such lands or other property were acquired, for the purpose of ascertaining the rental thereof.

SECTION 21. The commission shall determine and award the damages sustained by any person by reason of property taken or injured by the commission under authority of this act, except public ways or lands, and may agree with any such person as to the amount of his damages, which amount the city shall be liable to pay. If any such person is dissatisfied with such award, or cannot agree with the commission upon his damages, the same may be determined by a jury in the superior court for the county of Suffolk, on petition therefor of such person, or of the com-

mission, against the city, filed in the clerk's office within one year after the property is taken, entered on, or injured; and judgment shall be entered upon the determination of the jury and costs shall be taxed and execution issued in favor of the prevailing party as in civil cases. The members of the commission shall not be liable personally for any such damage. The provisions of sections seventeen to twenty-five, inclusive, and of section one hundred and fourteen of chapter forty-eight of the Revised Laws, relating to procedure in case of damage to estates in which several parties have different or several interests shall apply to proceedings in such cases under this act.

SECTION 22. The commission may order the temporary removal or relocation of any surface tracks, and the temporary or permanent removal or relocation of any conduits, pipes, wires, poles or other property of any person or corporation which it deems to interfere with the construction or operation of any tunnel or subway authorized by this act, and shall grant new locations for any such structures so removed or relocated. Such orders, to the extent specified therein, shall be deemed a revocation of the right or license to maintain such tracks, conduits, pipes, wires, poles or other property, and the owner of any such structures in public ways or lands shall comply with the said orders without expense to the city. If any such owner shall fail to comply with the order of the commission within a reasonable time, to be fixed in the order, the commission may discontinue and remove such tracks, conduits, pipes, wires, poles or other property, and may relocate the same, and the cost of such discontinuance, removal or relocation shall be repaid to the city by the owner. No such discontinuance, removal or relocation shall entitle the owner of the property thus affected to any damages on account thereof. Any such structures in or upon private lands may be removed and relocated by the commission, or if removed and relocated by the owner thereof, the reasonable expense shall be paid to him by the commission. Any gas or electric lighting company may shut off the gas or current from any pipes or wires affected by any acts done hereunder, so far as may be necessary to avoid danger of escape or explosion of gas, or other public danger.

SECTION 23. Debts incurred by the city for the construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, including the widening of Cambridge street authorized by this act, shall not be considered in determining the statutory limit of indebtedness of the city.

SECTION 24. The company, for the equipment of the tunnels and subways authorized by this act, and for all expenditures by the company required or authorized hereby, from time to time, in the manner and subject to the requirements prescribed by law, may issue and dispose of such amounts of its capital stock or bonds, or of each, at its option, in addition to the amounts heretofore authorized, as may be necessary therefor.

In respect to the equipment, use and operation of the railway to be located in the tunnels and subways and transportation therein, the company shall have all the powers and privileges and be subject to all the

duties, liabilities, restrictions and provisions set forth in general and special laws now or hereafter in force applicable to it. To provide for proper connections of the tracks in any subway or tunnel authorized by this act with surface tracks, the company may make such alterations or extensions of its surface tracks and appurtenances as the board may approve.

SECTION 25. Upon the determination by the commission of any important question relating to any plan or work herein provided for, except an award of or agreement upon damages, as provided in section twenty-one hereof, the company may, within three days after notice of such determination, apply to the board for a revision of the same, and thereupon the board may consider and finally determine such question.

SECTION 26. The supreme judicial court and the superior court, upon application of any party in interest, including the city, the commission, the company or any ten taxable inhabitants of the city, may enforce or prevent violation of the foregoing provisions of this act by any appropriate process.

* * * * *

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, pursuant to a vote of the Commission, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES
Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

DORCHESTER TUNNEL.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing lease being under consideration it was

"VOTED, that the lease of the Dorchester Tunnel in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the Acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

BOYLSTON STREET SUBWAY.

THE CONTRACT FOR THE USE OF THE BOYLSTON STREET SUBWAY.

I.—This contract made this seventh day of December ^{Parties.}
in the year nineteen hundred and eleven by and between
the city of Boston, hereinafter called the city, acting
by the Boston Transit Commission, hereinafter called
the commission, under and by virtue of an act of the
Commonwealth of Massachusetts entitled "An Act Rela-
tive to Electric Railway Transportation Facilities in the
City of Boston and its Vicinity," being chapter seven ^{St. 1911, c. 741,}
hundred and forty-one of the acts of the year nineteen
hundred and eleven, hereinafter called the act, and the
Boston Elevated Railway Company, hereinafter called
the company, witnesseth as follows:

II.—The city, pursuant to the act and in consideration of ^{Grant.}
the covenants and agreements herein contained, grants to the ^{St. 1911, c. 741,}
company the sole and exclusive use of the Boylston Street ^{s. 7.}
subway, hereinafter called the premises, as defined in the
act, and to be constructed under authority thereof, for the
running of its cars therein and such other uses as are here- ^{Uses}
inafter specified.

III.—The use shall begin when in the opinion of the com- ^{Beginning of}
mission a reasonable time after completion has been al- ^{Use.}
lowed for equipment. ^{St. 1911, c. 741,}
^{s. 7.}

IV.—The term of years of the use shall extend from the ^{Term.}
beginning of the use to the first day of July, nineteen hun- ^{St. 1911, c. 741,}
dred and thirty-six, and thereafter is to continue unless ^{s. 32.}

All contracts for the use of the Tremont street subway, ^{St. 1911, c. 741,}
the East Boston tunnel, the Washington street tunnel, ^{s. 34.}

the tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of the city, approved by the board of Railroad Commissioners, hereinafter called the board. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.
St. 1911, c. 741,
s. 32.

V.—The rental shall be at the rate of four and one-half per cent. per annum upon the net cost.

St. 1911, c. 741,
s. 7.

The net cost shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction including damages, expenses and salaries of the commission, and the interest on the debt incurred in construction prior to the beginning of the use, and shall also include all expenses incurred in connection with the Riverbank subway authorized by chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven, prior to the date when the act took effect. The cost of enlarging the Tremont street subway, if that is done, or of building a separate subway, as provided in the act, shall be included in the cost of the premises. For the purpose of ascertaining the rental there shall be deducted from the cost the proceeds of sales and leases of lands, rights, or interests in lands or other property acquired by

St. 1911, c. 741,
s. 20.
St. 1911, c. 741,
s. 5.

St. 1911, c. 741,
s. 20.

the commission in connection with the construction of the premises and the proceeds of sales or leases of buildings or other structures upon lands so acquired, and the fair valuation of any such lands and other property no longer needed for the purposes of the Boylston Street subway but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board. Any interest received by the city upon the proceeds of the bonds issued by it prior to the expenditure of such proceeds shall be credited against interest during construction in ascertaining the net cost. St. 1911, c. 741,
§. 9.

The rental shall begin when the use begins.

The rental shall be paid to the city in quarterly payments on the last day of December, March, June and September in each year and at the rate aforesaid for any uncompleted quarter of a year.

If at any time during the continuance of the term of this contract the company shall be deprived in whole or in part of the use of the premises by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; then the rental or a just and reasonable part thereof, as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, shall be suspended or abated during such deprivation.

VI.—The company shall suitably lay and maintain in Equipment. first-class condition railway tracks in proper places in the premises, together with the appointments and apparatus necessary for the safe and convenient operation of the same and shall provide and maintain all wires, electrical or other

apparatus or equipment necessary or convenient for the furnishing of power and light therein and shall further provide requisite pumps, fans and ventilating apparatus and in general shall completely equip and furnish the premises with all machinery, piping, apparatus and furniture proper and adapted thereto and necessary for the convenient maintenance and operation of a railway therein and for the safety and accommodation of the passengers upon such railway.

All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

Repairs.

VII.—The company shall maintain the premises, except as to repairs below excepted, in good order and condition as a structure complete so far as consistent with the provisions of the act, and adapted to the maintenance and use of lines of railway, and shall at all reasonable times be entitled to a permit to open the streets and other public grounds of the city for the purpose of making requisite repairs to the premises, and when the right of the company or its assigns to use the premises shall terminate shall restore them to the city in good condition except as to repairs not obligatory upon the company.

All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their

part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises, and if repairs shall be made necessary by any of said excepted causes then such repairs shall be made by the company and the reasonable cost and expense thereof deducted from the rental subsequently payable.

VIII.—The city shall not be responsible to the company ^{Liability for damages.} for damages of any description resulting from any defects in the premises, whether structural or arising out of want of repair or from any cause after the use of the same by the company has begun as hereinbefore provided, unless such damage result from the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; nor shall it be responsible for any damages resulting to persons or property in the operation and use of the premises, including all parts thereof, whether on property belonging to the city or upon property the fee of which belongs to other parties, and the company shall hold the city harmless and indemnified therefrom and shall at its own expense upon due notice from the city defend all suits and other proceedings of every description, whether at law or in equity, which may be brought against the city, its officers, servants or agents by reason of any liability arising out of the operation and use of any portion of the premises or of the railways, machinery and apparatus therein and accruing after the right to use such portion has begun as herein provided, and shall satisfy all final judgments of legal tribunals rendered in such suits and proceedings. The foregoing provisions shall not be construed to impose any liability or obligation upon the company for any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the

use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises.

Premises to be kept clean.

IX.—The company shall keep the premises thoroughly clean and free from unnecessary dampness, and the approaches to stations clean and free from ice and snow. When the premises are in use it shall suitably light the same in all parts, and by means of artificial ventilation shall keep the air adequately pure for health and comfort.

Changes in premises.

X.—The company within the limitations of the act may make such alterations in or additions to the premises as may be approved by the commission.

Sundry uses.

XI.—To the extent of the power of the company so to do and the power of the commission to contract therefor, the company may place and maintain in the premises booths for the sale of newspapers, magazines, periodicals and books and in places specially adapted therefor may place or admit unobjectionable advertisements, and may make such other uses of the premises, not impairing the use for transportation of passengers, as the board may from time to time approve; provided however that such booths and advertisements shall not be so placed or used as to diminish or impair the safety, accommodation, convenience or comfort of passengers using the premises; and the company agrees that upon receipt of notice in writing at any time or from time to time from the board that in its opinion any of the uses above referred to or approved, either in whole or in part, in any way diminish or impair such safety, accommodation, convenience or comfort or conflict in any way with the best interests of the public, it will forthwith to the extent specified in the notice discontinue such use.

Newspaper booths and advertisements.

Wires, conduits and tubes.

XII.—The company, upon such terms as it may deem expedient, may permit any person or corporation not authorized to carry on a railway business but authorized to use and maintain wires, conduits, tubes or similar structures along the route of the premises, to place such wires, conduits, tubes or similar structures within a corresponding portion of the premises used by the company, but only to such

extent and for such time as may be practicable without interfering with the safe and convenient operation of the railway and other apparatus which the company is hereby authorized to put therein, but the privilege shall not extend to gas or water pipes.

Except as above provided the company shall not have the right to place in the premises or attach thereto any structures, machinery, merchandise, apparatus, advertisements or property of any sort which are not necessary or proper for the operation of its railway therein and the performance of its agreements herein contained.

XIII.—The city may place in the premises such wires and apparatus as may be necessary for its police and fire-alarm service, to be used however exclusively for such service and to be so located as not to interfere with the use of the premises which the company is hereby authorized to make. The location, construction, maintenance and repair of such wires and apparatus shall be subject to such reasonable directions and regulations as the company may impose or in case of any disagreement as the board may determine.

XIV.—In the event of the failure of the company or its assigns to pay the rental for three months after such rental shall have become due, or in the event of a failure to maintain and operate a railway within the premises, and if such failure shall have continued for three months, then in either of said events the city upon three months' notice, such default still continuing, shall have the right to terminate this contract and to re-enter upon and re-possess itself of the premises, unless such failure to maintain and operate grows out of the act of God, of public enemies, of mobs or of riots; or grows out of works or excavations carried on or permitted by the city or other public authority; or grows out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises; or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or grows out of the location, maintenance or use of the wires or other apparatus which the city is herein authorized to maintain

Police and Fire
Alarm Service.

Default and
penalty.

in the premises. In case the right of re-entry and re-possession above given shall be exercised, all the tracks, wires, apparatus, equipment and other property in the nature of fixtures of the company or its assigns within the premises may be taken by the city and be paid for by it at a valuation to be determined as herein provided for the occasion when the same are to be surrendered by the company at the expiration of the term of this contract.

Removal of
property by
railway com-
pany.

XV.—The company shall have no right at any time to remove from the premises any tracks, wires, apparatus, equipment or other property necessary to the use and maintenance of the premises and the operation of a railway therein, except for the purpose of repairs or renewal or for the substitution of equivalent structures, property, apparatus or equipment.

Inspection by
public officials.

XVI.—The governor of the commonwealth, the mayor and commissioner of public works of the city, and the members of the board and of the commission, and their respective engineers shall at all times have free entry to the premises for the purpose of inspecting the same.

Arbitration.

XVII.—In case of disagreement between the city acting by its mayor and the company as to the amount due for rental, or as to the suspension or abatement thereof as herein provided, or as to the valuation of the property upon the termination of the use herein contracted for, the matter in dispute shall be left to the decision of three persons, one to be selected by the mayor of the city, one to be selected by the company and the third by the two thus chosen. The report of the arbitrators or the majority of them shall be binding upon the parties hereto.

Termination of
the existence of
the commis-
sion.

XVIII. In respect of all matters arising under this contract where provision is made for action by the commission or its approval of acts to be done by the company is required, it is provided and agreed that upon the termination of the existence of the commission the authority to take such action shall vest in the city, which shall have all the rights, powers and privileges and be subject to all the duties, restrictions and liabilities herein conferred or imposed upon the commission in respect thereof; such powers to be exercised by the mayor, commissioner of public works and city treasurer in place of the commission or by such other officers as the city council may prescribe.

XIX.—With respect to the equipment, use and operation of the railway to be located in the premises and transportation thereon, the company is to have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws which now are or hereafter may be in force applicable to it.

The company to be subject to law.

XX.—The use and control of the premises under this contract is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law.

Rights of West End Street Railway Company. St. 1911, c. 741, s. 40.

XXI.—This contract shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may at any time have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this contract nor shall it be diminished because of the fact that without this contract the connection between different parts of said properties might be cut off.

Right of Commonwealth or City to Take by Eminent Domain.

XXII.—The recital of any provision of the act in the body of this contract shall not be deemed to convey any implication that any other provision thereof is not equally a part of the contract, and it is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the act in the form and as approved on the twentieth day of July, nineteen hundred and eleven, is and shall be void and of no effect.

Controlling Effect of the Act.

XXIII.—The following is a copy of those sections of Part I of the act, the provisions of which, in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the premises, are embodied in and made part of this contract, as required by the act.

St. 1911, c. 741, s. 7. Copy of Certain Provisions of the Act.

[Chap. 741, Acts of 1911.]

AN ACT RELATIVE TO ELECTRIC RAILWAY TRANSPORTATION FACILITIES IN THE CITY OF BOSTON AND ITS VICINITY.

* * * * *

Boylston Street Subway.

SECTION 5. The commission (a) shall construct in the city of Boston a subway (hereinafter called the Boylston street subway) so designed as to be adapted to contain two railway tracks, commencing with an open cut at or near the junction of Commonwealth avenue and Beacon street, thence continuing to, in, and under Commonwealth avenue, Charlesgate west, the Fenway, Charlesgate east, Newbury street, crossing under Massachusetts avenue; thence passing under or across private land and land of the city of Boston to a point under Boylston street near Hereford street; thence under Boylston street to a point at or near its junction with Arlington street; thence in and under public ways and public or private lands by such route as the commission may determine, to a point at or near the junction of Boylston street and Tremont street, and thence in or under Tremont street and public lands to a point at or near the Park street station of the Tremont street subway, together with stations at Massachusetts avenue, at Copley square, at or near the corner of Boylston and Tremont streets, and at or near Park street. Instead of constructing said subway as a continuous line from Arlington street to Park street station, the commission may connect said subway at or near the junction of Boylston street and Tremont street with the tracks of the present Tremont street subway, and between that point and the Park street station may either enlarge the present Tremont street subway so as to provide for two additional tracks, or may construct a separate subway adapted to contain two railway tracks, connecting the same with the present Tremont street subway and the tracks located therein.

The cost of enlarging the Tremont street subway, if that is done, or of building said separate subway, as above provided, shall be included in the cost of the Boylston street subway.

Any tunnel or subway construction under, or within one hundred feet of, Boston Common shall be made, so far as is practicable, water tight, and the work shall be so done as to avoid the drainage of moisture from the surrounding soil, or other injury to the trees; and the commission may construct a suitable system of sub-soil irrigation above or near the line of any section of said subway constructed under the common, or may take any other measures which it may deem expedient for the preservation of the trees, to be paid for as a part of the cost of the subway. The commission shall not erect any additional permanent structures above the surface of the common.

SECTION 6. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan signed by the commission showing the proposed route, and the general form and method of construction, the location

(a) Boston Transit Commission.

of proposed tracks, stations and approaches and the alignment and grade, which plan shall be submitted to the company (a) for its examination, nor until the contract hereinafter mentioned for the use of said Boylston street subway has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 7. Within the time, and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company, shall execute a contract in writing for the sole and exclusive use of the subway by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years, and at an annual rental as specified in Part II of this act, upon such provisions and conditions, not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or in case of difference as the board [of Railroad Commissioners] may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the subway shall be embodied in and made a part of said contract. The use of the subway shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction, including damages, expenses and salaries of the commission, and the interest on the debt incurred in construction prior to the beginning of the use, and shall also include all expenses already incurred in connection with the Riverbank subway authorized by chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven.

SECTION 8. So much of chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven as authorizes the construction of a subway and tunnel to be designated as the Riverbank subway is hereby repealed. The proceeds not already expended of the bonds already issued under section thirteen of said chapter, designated on their face as Boston Riverbank Subway Loan, including any premiums realized from the sale thereof, less the amount of said proceeds used as specified in section fourteen of this act, shall be used for the same purposes as the proceeds of the bonds authorized by section nine of this act, but no more such Riverbank subway bonds shall be issued after this act takes effect.

SECTION 9. The treasurer of the city of Boston shall, from time to time, on request of the commission, issue and sell, at public or private sale, the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the subway provided for by section five of this act, less the amount of the proceeds of any Riverbank subway bonds not already expended

(a) Boston Elevated Railway Company.

and not used as specified in section fourteen of this act. Such bonds shall be designated on their face as Boylston Street Subway Bonds, shall be for such terms, not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest, payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof, shall be used to meet all damages, costs and expenses incurred by the commission or by the city in carrying out the provisions of this act for the construction of the Boylston street subway. The proceeds of any sale or sales of land or rights taken, or acquired by purchase or otherwise, under the provisions of this act for the construction of said subway shall be used for the same purposes as the rentals of said subway, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of said subway under this act, or for any use of any lands or rights acquired under the provisions of this act for the Boylston street subway, shall be used in the first instance for the payment of interest on the bonds issued for the cost of said subway, and on the Riverbank subway bonds, and the balance shall be used for the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds, prior to the expenditure of such proceeds, shall be credited against interest during construction in ascertaining the net cost of the said subway. The city shall have, hold and enjoy in its private or proprietary capacity for its own property the said tunnel and subway and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway or tunnel or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

* * * * *

SECTION 14. The commission shall, immediately after the passage of this act, make such preliminary investigations, surveys and plans as it may deem expedient, and to that end may enter upon any lands, and place and maintain marks therein, and may make excavations and borings, and do all other acts necessary for such investigations and surveys, and may expend such sums as it deems necessary therefor. The expenses incurred in making such preliminary investigations, surveys and plans to an amount not exceeding fifty thousand dollars shall be paid from the proceeds of the Riverbank subway bonds. Upon the construction of the respective tunnels and subways herein provided for such expenses shall be deemed a part of the cost thereof, and shall be charged to the respective subways and tunnels for which the expense was incurred.

SECTION 15. The construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, hereinbefore authorized, shall be begun, in each respective case, immediately after the contract for the use of such tunnel or subway has been executed by the commission and the company.

SECTION 16. In connection with the construction of any tunnel or subway authorized by this act the commission may, for the purpose of avoiding objectionable curves or any practical or legal obstacles, vary or alter the routes herein respectively prescribed for the tunnels and subways, and for the said purposes may locate the tunnels, subways and stations or any of them, in whole or in part, on private or public lands. The commission may also, in connection with any tunnel or subway, construct such approaches, sidings, spur tracks, loops, entrances, inclines, elevators, connections and other structures as it may deem necessary. The commission may, with the consent of the company, make such alterations in the existing tunnels and subways, including stations and exits and entrances thereof, as it may deem necessary or advisable.

SECTION 17. The commission may make contracts in the name of the city for the work herein authorized, but all contracts involving two thousand dollars or more in amount shall be in writing and signed by a majority of the commission; and no such contract shall be altered except by an instrument in writing, signed by the contractor and a majority of the commission, and also by the sureties, if any, on the bond given by the contractor for the completion of the original contract. No such contract, and no alteration of any such contract, shall be valid or binding on the city unless executed in the manner aforesaid.

SECTION 18. All work done under this act, under or near public streets and places shall be conducted, so far as may be practicable, in such manner as to leave such streets and places, or a reasonable part thereof, open for traffic between the hours of seven in the forenoon and six in the afternoon of each secular day, except legal holidays.

SECTION 19. The commission may, for the purposes of this act, use public ways and lands without compensation therefor, and may take, or acquire by purchase or otherwise for the city, lands in fee, and easements, estates and rights in land, including the right to go under the surface thereof or through or under buildings or parts of buildings thereon; and such taking in fee or otherwise may be made whether the lands taken or otherwise affected are held under or by title derived under eminent domain or otherwise, and may be made for the purpose of providing locations for pipes, wires, conduits, and other structures the relocation of which is made necessary or expedient by the construction of any subway or tunnel authorized by this act. A taking under this section of an easement or other estate or right in a given parcel of real estate, whether such parcel consists of unimproved land or of land and buildings, may be confined to a portion or section of such parcel fixed by planes or other surfaces of division, below, above, or at the surface of the soil; and in such case no taking need be made of upper or lower portions or sections, except of such easements therein, if any, as the commission may deem necessary. The commission, to make any taking by right of eminent domain, shall cause to be recorded in the registry of deeds for the county of Suffolk a description of the lands, easements, estates or rights to be taken, as certain as is required in a common conveyance of land, with the statement that the same are taken under authority of this act, which description and statement shall be signed by the commission; and the lands, ease-

ments, estates or rights therein described shall upon such recording be taken for and shall vest in the city. The commission shall, so far as may be practicable, notify all known owners of such taking, but the validity thereof shall not be affected by want of such notice.

SECTION 20. The commission may sell the buildings and other structures upon any lands acquired by it, or may remove the same; and shall sell, if a sale be practicable, or if not shall lease, any lands, or rights or interests in land or other property acquired for the purposes of this act, whenever the same shall, in the opinion of the commission, cease to be needed for such purposes. The proceeds of such sales and leases, and the fair valuation of any such lands or other property no longer needed for the said purposes, but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board, shall be deducted from the cost of the tunnel or subway for the construction of which such lands or other property were acquired, for the purpose of ascertaining the rental thereof.

SECTION 21. The commission shall determine and award the damages sustained by any person by reason of property taken or injured by the commission under authority of this act, except public ways or lands, and may agree with any such person as to the amount of his damages, which amount the city shall be liable to pay. If any such person is dissatisfied with such award, or cannot agree with the commission upon his damages, the same may be determined by a jury in the superior court for the county of Suffolk, on petition therefor of such person, or of the commission, against the city, filed in the clerk's office within one year after the property is taken, entered on, or injured; and judgment shall be entered upon the determination of the jury and costs shall be taxed and execution issued in favor of the prevailing party as in civil cases. The members of the commission shall not be liable personally for any such damage. The provisions of sections seventeen to twenty-five, inclusive, and of section one hundred and fourteen of chapter forty-eight of the Revised Laws, relating to procedure in case of damage to estates in which several parties have different or several interests shall apply to proceedings in such cases under this act.

SECTION 22. The commission may order the temporary removal or relocation of any surface tracks, and the temporary or permanent removal or relocation of any conduits, pipes, wires, poles or other property of any person or corporation which it deems to interfere with the construction or operation of any tunnel or subway authorized by this act, and shall grant new locations for any such structures so removed or relocated. Such orders, to the extent specified therein, shall be deemed a revocation of the right or license to maintain such tracks, conduits, pipes, wires, poles or other property, and the owner of any such structures in public ways or lands shall comply with the said orders without expense to the city. If any such owner shall fail to comply with the order of the commission within a reasonable time, to be fixed in the order, the commission may discontinue and remove such tracks, conduits, pipes, wires, poles or other property, and may relocate the same, and the cost of such discontinuance, removal or relocation shall be repaid to the

city by the owner. No such discontinuance, removal or relocation shall entitle the owner of the property thus affected to any damages on account thereof. Any such structures in or upon private lands may be removed and relocated by the commission, or if removed and relocated by the owner thereof, the reasonable expense shall be paid to him by the commission. Any gas or electric lighting company may shut off the gas or current from any pipes or wires affected by any acts done hereunder, so far as may be necessary to avoid danger of escape or explosion of gas, or other public danger.

SECTION 23. Debts incurred by the city for the construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, including the widening of Cambridge street authorized by this act, shall not be considered in determining the statutory limit of indebtedness of the city.

SECTION 24. The company, for the equipment of the tunnels and subways authorized by this act, and for all expenditures by the company required or authorized hereby, from time to time, in the manner and subject to the requirements prescribed by law, may issue and dispose of such amounts of its capital stock or bonds, or of each, at its option, in addition to the amounts heretofore authorized, as may be necessary therefor.

In respect to the equipment, use and operation of the railway to be located in the tunnels and subways and transportation therein, the company shall have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws now or hereafter in force applicable to it. To provide for proper connections of the tracks in any subway or tunnel authorized by this act with surface tracks, the company may make such alterations or extensions of its surface tracks and appurtenances as the board may approve.

SECTION 25. Upon the determination by the commission of any important question relating to any plan or work herein provided for, except an award of or agreement upon damages, as provided in section twenty-one hereof, the company may, within three days after notice of such determination, apply to the board for a revision of the same, and thereupon the board may consider and finally determine such question.

SECTION 26. The supreme judicial court and the superior court, upon application of any party in interest, including the city, the commission, the company or any ten taxable inhabitants of the city, may enforce or prevent violation of the foregoing provisions of this act by any appropriate process.

* * * * *

BOYLSTON STREET SUBWAY.

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, pursuant to a vote of the Commission, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES

Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY

By WILLIAM A. BANCROFT (Seal)
President.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing lease being under consideration it was

"VOTED, that the lease of the Boylston Street Subway in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the Acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

EAST BOSTON TUNNEL EXTENSION.

THE CONTRACT FOR THE USE OF THE EAST BOSTON TUNNEL EXTENSION.

I.—This contract made this seventh day of Decem- ^{Parties.}
ber in the year nineteen hundred and eleven by and
between the city of Boston, hereinafter called the city,
acting by the Boston Transit Commission, hereinafter
called the commission, under and by virtue of an act of
the Commonwealth of Massachusetts entitled "An Act Rela- ^{St. 1911, c. 741,}
tive to Electric Railway Transportation Facilities in the City
of Boston and its Vicinity," being chapter seven hundred and
forty-one of the acts of the year nineteen hundred and eleven,
hereinafter called the act, and the Boston Elevated Railway
Company, hereinafter called the company, witnesseth as
follows:

II.—The city, pursuant to the act and in consideration of ^{Grant.}
the covenants and agreements herein contained, grants to the ^{St. 1911, c. 741,}
company the sole and exclusive use of the East Boston ^{s. 12.}
tunnel extension, hereinafter called the premises, as defined ^{Premises.}
in the act, and to be constructed under authority thereof,
for the running of its cars therein and such other uses as ^{Uses.}
are hereinafter specified.

III.—The use shall begin when in the opinion of the com- ^{Beginning of}
mission a reasonable time after completion has been al- ^{Use.}
lowed for equipment. ^{St. 1911, c. 741,}
^{s. 12.}

IV.—The term of years of the use shall extend from the be- ^{Term.}
ginning of the use to the first day of July, nineteen hundred ^{St. 1911, c. 741,}
and thirty-six, and thereafter is to continue unless or until ^{s. 33.}
terminated as follows:

All contracts for the use of the Tremont street subway, ^{St. 1911, c. 741,}
the East Boston tunnel, the Washington street tunnel, the ^{s. 34.}

tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of the city, approved by the board of Railroad Commissioners, hereinafter called the board. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.

St. 1911, c. 741,
s. 33, 34.

St. 1911, c. 741,
s. 12.

St. 1911, c. 741,
s. 20.

St. 1911, c. 741,
s. 13.

V.—The rental shall be at the rate of four and one-half per cent. per annum upon the net cost.

The net cost shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction and in making necessary changes in the East Boston tunnel including damages, expenses (except damages and all other expenses for lands and rights in lands or otherwise incurred, for the widening of Cambridge street, one-half of which damages and expenses, less the betterments the city shall pay, in the same manner as for other work done under chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, and one-half of which shall be considered as part of the cost of the premises and be paid for out of the proceeds of bonds issued under section thirteen of the act), and salaries of the commission, and the interest on the debt incurred in construction prior to the beginning of the use.

For the purpose of ascertaining the rental there shall be ^{St. 1911, c. 741, s. 20.} deducted from the cost, except as above provided, the proceeds of sales and leases of lands, rights, or interests in lands or other property acquired by the commission in connection with the construction of the premises, and the proceeds of sales or leases of buildings or other structures upon lands so acquired, and the fair valuation of any such lands and other property no longer needed for the purposes of the East Boston tunnel extension but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board. Any interest received by the ^{St. 1911, c. 741, s. 13.} city upon the proceeds of the bonds issued by it prior to the expenditure of such proceeds shall be credited against interest during construction in ascertaining the net cost.

The rental shall begin when the use begins.

The rental shall be paid to the city in quarterly payments on the last day of December, March, June and September in each year and at the rate aforesaid for any uncompleted quarter of a year.

If at any time during the continuance of the term of this contract the company shall be deprived in whole or in part of the use of the premises by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; then the rental or a just and reasonable part thereof, as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, shall be suspended or abated during such deprivation.

VI.—The company shall suitably lay and maintain in ^{Equipment.} first-class condition railway tracks in proper places in the

premises, together with the appointments and apparatus necessary for the safe and convenient operation of the same and shall provide and maintain all wires, electrical or other apparatus or equipment necessary or convenient for the furnishing of power and light therein and shall further provide requisite pumps, fans and ventilating apparatus and in general shall completely equip and furnish the premises with all machinery, piping, apparatus and furniture proper and adapted thereto and necessary for the convenient maintenance and operation of a railway therein and for the safety and accommodation of the passengers upon such railway.

All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

Repairs.

VII.—The company shall maintain the premises, except as to repairs below excepted, in good order and condition as a structure complete so far as consistent with the provisions of the act, and adapted to the maintenance and use of lines of railway, and shall at all reasonable times be entitled to a permit to open the streets and other public grounds of the city for the purpose of making requisite repairs to the premises, and when the right of the company or its assigns to use the premises shall terminate shall restore them to the city in good condition except as to repairs not obligatory upon the company.

All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruc-

tion of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; and if repairs shall be made necessary by any of said excepted causes then such repairs shall be made by the company and the reasonable cost and expense thereof deducted from the rental subsequently payable.

VIII.—The city shall not be responsible to the company ^{Liability for damages.} for damages of any description resulting from any defects in the premises, whether structural or arising out of want of repair or from any cause after the use of the same by the company has begun as hereinbefore provided, unless such damage result from the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; nor shall it be responsible for any damages resulting to persons or property in the operation and use of the premises, including all parts thereof, whether on property belonging to the city or upon property the fee of which belongs to other parties, and the company shall hold the city harmless and indemnified therefrom and shall at its own expense upon due notice from the city defend all suits and other proceedings of every description, whether at law or in equity, which may be brought against the city, its officers, servants or agents by reason of any liability arising out of the operation and use of any portion of the premises or of the railways, machinery and apparatus therein and accruing after the right to use such portion has begun as herein provided, and shall satisfy all final judgments of legal tribunals rendered in such suits and proceedings. The foregoing provisions shall not be construed to impose any liability or obligation upon the company for any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in

or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises.

Premises to be kept clean.

IX.—The company shall keep the premises thoroughly clean and free from unnecessary dampness, and the approaches to stations clean and free from ice and snow. When the premises are in use it shall suitably light the same in all parts, and by means of artificial ventilation shall keep the air adequately pure for health and comfort.

Changes in premises.

X.—The company within the limitations of the act may make such alterations in or additions to the premises as may be approved by the commission.

Sundry uses.

XI.—To the extent of the power of the company so to do and the power of the commission to contract therefor, the company may place and maintain in the premises booths for the sale of newspapers, magazines, periodicals and books, and in places specially adapted therefor may place or admit unobjectionable advertisements, and may make such other uses of the premises, not impairing the use for transportation of passengers, as the board may from time to time approve; provided however that such booths and advertisements shall not be so placed or used as to diminish or impair the safety, accommodation, convenience or comfort of passengers using the premises; and the company agrees that upon receipt of notice in writing at any time or from time to time from the board that in its opinion any of the uses above referred to or approved, either in whole or in part, in any way diminish or impair such safety, accommodation, convenience or comfort or conflict in any way with the best interests of the public, it will forthwith to the extent specified in the notice discontinue such use.

Newspaper booths and advertisements.

Wires, conduits and tubes.

XII.—The company, upon such terms as it may deem expedient, may permit any person or corporation not authorized to carry on a railway business but authorized to use and maintain wires, conduits, tubes or similar structures along the route of the premises, to place such wires, conduits, tubes

or similar structures within a corresponding portion of the premises used by the company, but only to such extent and for such time as may be practicable without interfering with the safe and convenient operation of the railway and other apparatus which the company is hereby authorized to put therein, but the privilege shall not extend to gas or water pipes.

Except as above provided the company shall not have the right to place in the premises or attach thereto any structures, machinery, merchandise, apparatus, advertisements or property of any sort which are not necessary or proper for the operation of its railway therein and the performance of its agreements herein contained.

XIII. The city may place in the premises such wires and apparatus as may be necessary for its police and fire-alarm service, to be used however exclusively for such service and to be so located as not to interfere with the use of the premises which the company is hereby authorized to make. The location, construction, maintenance and repair of such wires and apparatus shall be subject to such reasonable directions and regulations as the company may impose or in case of any disagreement as the board may determine.

Police and Fire
Alarm Service.

XIV.—In the event of the failure of the company or its assigns to pay the rental for three months after such rental shall have become due, or in the event of a failure to maintain and operate a railway within the premises, and if such failure shall have continued for three months, then in either of said events the city upon three months' notice, such default still continuing, shall have the right to terminate this contract and to re-enter upon and repossess itself of the premises, unless such failure to maintain and operate grows out of the act of God, of public enemies, of mobs, or riots; or grows out of works or excavations carried on or permitted by the city or other public authority; or grows out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided;

Default and
penalty.

or grows out of the location, maintenance or use of the wires or other apparatus which the city is herein authorized to maintain in the premises. In case the right of re-entry and repossession above given shall be exercised, all the tracks, wires, apparatus, equipment and other property in the nature of fixtures of the company or its assigns within the premises may be taken by the city and be paid for by it at a valuation to be determined as herein provided for the occasion when the same are to be surrendered by the company at the expiration of the term of this contract.

Removal of
property by
railway com-
pany

XV.—The company shall have no right at any time to remove from the premises any tracks, wires, apparatus equipment or other property necessary to the use and maintenance of the premises and the operation of a railway therein, except for the purpose of repairs or renewal or for the substitution of equivalent structures, property, apparatus or equipment.

Inspection by
public officials.

XVI.—The governor of the commonwealth, the mayor and commissioner of public works of the city, and the members of the board and of the commission, and their respective engineers shall at all times have free entry to the premises for the purpose of inspecting the same.

Arbitration.

XVII.—In case of disagreement between the city acting by its mayor and the company as to the amount due for rental, or as to the suspension or abatement thereof as herein provided, or as to the valuation of the property upon the termination of the use herein contracted for, the matter in dispute shall be left to the decision of three persons, one to be selected by the mayor of the city, one to be selected by the company and the third by the two thus chosen. The report of the arbitrators or the majority of them shall be binding upon the parties hereto.

Termination of
the existence of
the commis-
sion.

XVIII.—In respect of all matters arising under this contract where provision is made for action by the commission or its approval of acts to be done by the company is required, it is provided and agreed that upon the termination of the existence of the commission the authority to take such action shall vest in the city, which shall have all the rights, powers and privileges and be subject to all the duties, restrictions and liabilities herein conferred or imposed upon the commission in respect thereof; such powers to be exercised by the mayor,

commissioner of public works and city treasurer in place of the commission or by such other officers as the city council may prescribe.

XIX.—With respect to the equipment, use and operation of the railway to be located in the premises and transportation thereon, the company is to have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws which now are or hereafter may be in force applicable to it. The company to be subject to law.

XX.—The use and control of the premises under this contract is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law. Rights of West End Street Railway Company. St. 1911, c. 741, s. 40.

XXI.—This contract shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may at any time have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this contract nor shall it be diminished because of the fact that without this contract the connection between different parts of said properties might be cut off. Right of Commonwealth or City to Take by Eminent Domain.

XXII.—The recital of any provision of the act in the body of this contract shall not be deemed to convey any implication that any other provision thereof is not equally a part of the contract, and it is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the act in the form and as approved on the twentieth day of July, nineteen hundred and eleven, is and shall be void and of no effect. Controlling Effect of the Act.

XXIII.—The following is a copy of those sections of Part I of the act, the provisions of which, in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the premises and appurtenances, are embodied in and made part of this contract, as required by the act. Copy of Certain Provisions of the Act. St. 1911, c. 741, s. 12.

[Chap. 741, Acts of 1911.]

AN ACT RELATIVE TO ELECTRIC RAILWAY TRANSPORTATION FACILITIES IN THE CITY OF BOSTON AND ITS VICINITY.

* * * * *

East Boston Tunnel Extension.

SECTION 10. The commission (a) shall extend the East Boston tunnel by constructing a tunnel and subway (to be designated as the East Boston tunnel extension) connecting with the existing East Boston tunnel at grade or otherwise, so designed as to be adapted to contain two railway tracks, beginning at or near the present terminus of the East Boston tunnel in Court street near Scollay square; thence under Court street to and through Scollay square; thence under Tremont Row and under Court street to, under and through Bowdoin square, and thence under Cambridge street to a suitable connection with surface tracks in Cambridge street at a point at or near Lynde street, or at or near North Russell street, or between said streets, together with a station in or near Scollay square and a station in or near Bowdoin square, and with suitable approaches, sidings, entrances, elevators, inclines, connections and other structures; and the commission may, with the consent of the company (b), make any changes which it deems necessary or expedient in the existing subway and tunnel and such alterations or enlargements in the existing subway station in Scollay square and Court street and in the exits and entrances therefrom and thereto, as it may deem necessary or expedient. To provide for the connection of the tunnel extension with the surface tracks in Cambridge street, the commission, acting for this purpose in place of, and with all the powers of the board of street commissioners of the city of Boston and of the officer authorized to construct streets by chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, may widen, alter and construct Cambridge street in such manner as the commission may deem necessary or advisable, and may assess betterments for the improvement under section five of said chapter.

SECTION 11. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan signed by the commission showing the proposed route or the location thereof, and the general form and method of construction, the location of proposed tracks, stations and approaches, and the alignment and grade, which plan shall be submitted to the company for its examination, nor until the contract hereinafter mentioned for the use of said East Boston Tunnel extension has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 12. Within the time and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company shall execute a contract in writing for the sole and exclusive use of the East Boston tunnel extension by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years and at an annual rental

(a) Boston Transit Commission.

(b) Boston Elevated Railway Company.

as specified in Part II of this act, upon such provisions and conditions not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or, in case of difference, as the board [of Railroad Commissioners] may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the tunnel extension shall be embodied in and made a part of said contract. The use of the tunnel extension shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction and in making necessary changes in the East Boston tunnel, including damages, expenses (except damages and all other expenses for lands and rights in lands, or otherwise incurred, for the widening of Cambridge street, one-half of which damages and expenses, less the betterments the city shall pay, in the same manner as for other work done under said chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, and one-half of which shall be considered as part of the cost of the tunnel extension and be paid for out of the proceeds of bonds issued under section thirteen), and salaries of the commission and the interest on the debt incurred in construction prior to the beginning of the use.

SECTION 13. The treasurer of the city of Boston shall, from time to time, on the request of the commission, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the tunnel and subway provided for by section ten of this act. Such bonds shall be designated on their face East Boston Tunnel Extension Bonds; shall be for such terms, not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof, shall be used to meet all damages, costs and expenses incurred by the commission or by the city, except as aforesaid, in carrying out the provisions of this act relative to the construction of the said tunnel extension. The proceeds of any sale or sales of lands or rights taken or otherwise acquired under authority of this act for the construction of said tunnel extension (except lands and rights in land taken or purchased for the widening of Cambridge street, which shall be applied in reduction of the damages and expenses incurred for said widening), shall be used for the same purpose as the rentals of said tunnel extension, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of said tunnel extension under this act, and for any use of any lands or rights acquired under authority of this act for said tunnel extension, except as

aforesaid, shall be used in the first instance for the payment of interest on the bonds issued for the cost of said tunnel extension, and the balance shall be applied to the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds, prior to the expenditure of such proceeds, shall be credited against interest during construction in ascertaining the net cost of the said tunnel extension. The city shall have, hold and enjoy in its private or proprietary capacity, for its own property, the said subway and tunnel extension, and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway and tunnel extension or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

SECTION 14. The commission shall, immediately after the passage of this act, make such preliminary investigations, surveys and plans as it may deem expedient, and to that end may enter upon any lands, and place and maintain marks therein, and may make excavations and borings, and do all other acts necessary for such investigations and surveys, and may expend such sums as it deems necessary therefor. The expenses incurred in making such preliminary investigations, surveys and plans to an amount not exceeding fifty thousand dollars shall be paid from the proceeds of the Riverbank subway bonds. Upon the construction of the respective tunnels and subways herein provided for such expenses shall be deemed a part of the cost thereof, and shall be charged to the respective subways and tunnels for which the expense was incurred.

SECTION 15. The construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, hereinbefore authorized, shall be begun, in each respective case, immediately after the contract for the use of such tunnel or subway has been executed by the commission and the company.

SECTION 16. In connection with the construction of any tunnel or subway authorized by this act the commission may, for the purpose of avoiding objectionable curves or any practical or legal obstacles, vary or alter the routes herein respectively prescribed for the tunnels and subways, and for the said purposes may locate the tunnels, subways and stations or any of them, in whole or in part, on private or public lands. The commission may also, in connection with any tunnel or subway, construct such approaches, sidings, spur tracks, loops, entrances, inclines, elevators, connections and other structures as it may deem necessary. The commission may, with the consent of the company, make such alterations in the existing tunnels and subways, including stations and exits and entrances thereof, as it may deem necessary or advisable.

SECTION 17. The commission may make contracts in the name of the city for the work herein authorized, but all contracts involving two thousand dollars or more in amount shall be in writing and signed by a majority of the commission; and no such contract shall be altered except by an instrument in writing, signed by the contractor and a majority of the commission, and also by the sureties, if any, on the bond given by the contractor for the completion of the original contract. No such contract, and no alteration of any such contract, shall be valid or binding on the city unless executed in the manner aforesaid.

SECTION 18. All work done under this act, under or near public streets and places shall be conducted, so far as may be practicable, in such manner as to leave such streets and places, or a reasonable part thereof, open for traffic between the hours of seven in the forenoon and six in the afternoon of each secular day, except legal holidays.

SECTION 19. The commission may, for the purposes of this act, use public ways and lands without compensation therefor, and may take, or acquire by purchase or otherwise for the city, lands in fee, and easements, estates and rights in land, including the right to go under the surface thereof or through or under buildings or parts of buildings thereon; and such taking in fee or otherwise may be made whether the lands taken or otherwise affected are held under or by title derived under eminent domain or otherwise, and may be made for the purpose of providing locations for pipes, wires, conduits, and other structures the relocation of which is made necessary or expedient by the construction of any subway or tunnel authorized by this act. A taking under this section of an easement or other estate or right in a given parcel of real estate, whether such parcel consists of unimproved land or of land and buildings, may be confined to a portion or section of such parcel fixed by planes or other surfaces of division, below, above, or at the surface of the soil; and in such case no taking need be made of upper or lower portions or sections, except of such easements therein, if any, as the commission may deem necessary. The commission, to make any taking by right of eminent domain, shall cause to be recorded in the registry of deeds for the county of Suffolk a description of the lands, easements, estates or rights to be taken, as certain as is required in a common conveyance of land, with the statement that the same are taken under authority of this act, which description and statement shall be signed by the commission; and the lands, easements, estates or rights therein described shall upon such recording be taken for and shall vest in the city. The commission shall, so far as may be practicable, notify all known owners of such taking, but the validity thereof shall not be affected by want of such notice.

SECTION 20. The commission may sell the buildings and other structures upon any lands acquired by it, or may remove the same; and shall sell, if a sale be practicable, or if not shall lease, any lands, or rights or interests in land or other property acquired for the purposes of this act, whenever the same shall, in the opinion of the commission, cease to be needed for such purposes. The proceeds of such sales and leases, and the fair valuation of any such lands or other property no longer needed for the said purposes, but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board, shall be deducted from the cost of the tunnel or subway for the construction of which such lands or other property were acquired, for the purpose of ascertaining the rental thereof.

SECTION 21. The commission shall determine and award the damages sustained by any person by reason of property taken or injured by the commission under authority of this act, except public ways or lands, and may agree with any such person as to the amount of his damages, which amount the city shall be liable to pay. If any such person is dissatisfied with such award, or cannot agree with the commission upon his

damages, the same may be determined by a jury in the superior court for the county of Suffolk, on petition therefor of such person, or of the commission, against the city, filed in the clerk's office within one year after the property is taken, entered on, or injured; and judgment shall be entered upon the determination of the jury and costs shall be taxed and execution issued in favor of the prevailing party as in civil cases. The members of the commission shall not be liable personally for any such damage. The provisions of sections seventeen to twenty-five, inclusive, and of section one hundred and fourteen of chapter forty-eight of the Revised Laws, relating to procedure in case of damage to estates in which several parties have different or several interests shall apply to proceedings in such cases under this act.

SECTION 22. The commission may order the temporary removal or relocation of any surface tracks, and the temporary or permanent removal or relocation of any conduits, pipes, wires, poles or other property of any person or corporation which it deems to interfere with the construction or operation of any tunnel or subway authorized by this act, and shall grant new locations for any such structures so removed or relocated. Such orders, to the extent specified therein, shall be deemed a revocation of the right or license to maintain such tracks, conduits, pipes, wires, poles or other property, and the owner of any such structures in public ways or lands shall comply with the said orders without expense to the city. If any such owner shall fail to comply with the order of the commission within a reasonable time, to be fixed in the order, the commission may discontinue and remove such tracks, conduits, pipes, wires, poles or other property, and may relocate the same, and the cost of such discontinuance, removal or relocation shall be repaid to the city by the owner. No such discontinuance, removal or relocation shall entitle the owner of the property thus affected to any damages on account thereof. Any such structures in or upon private lands may be removed and relocated by the commission, or if removed and relocated by the owner thereof, the reasonable expense shall be paid to him by the commission. Any gas or electric lighting company may shut off the gas or current from any pipes or wires affected by any acts done hereunder, so far as may be necessary to avoid danger of escape or explosion of gas, or other public danger.

SECTION 23. Debts incurred by the city for the construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, including the widening of Cambridge street authorized by this act, shall not be considered in determining the statutory limit of indebtedness of the city.

SECTION 24. The company, for the equipment of the tunnels and subways authorized by this act, and for all expenditures by the company required or authorized hereby, from time to time, in the manner and subject to the requirements prescribed by law, may issue and dispose of such amounts of its capital stock or bonds, or of each, at its option, in addition to the amounts heretofore authorized, as may be necessary therefor.

In respect to the equipment, use and operation of the railway to be located in the tunnels and subways and transportation therein, the com-

pany shall have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws now or hereafter in force applicable to it. To provide for proper connections of the tracks in any subway or tunnel authorized by this act with surface tracks, the company may make such alterations or extensions of its surface tracks and appurtenances as the board may approve.

SECTION 25. Upon the determination by the commission of any important question relating to any plan or work herein provided for, except an award of or agreement upon damages, as provided in section twenty-one hereof, the company may, within three days after notice of such determination, apply to the board for a revision of the same, and thereupon the board may consider and finally determine such question.

SECTION 26. The supreme judicial court and the superior court, upon application of any party in interest, including the city, the commission, the company or any ten taxable inhabitants of the city, may enforce or prevent violation of the foregoing provisions of this act by any appropriate process.

* * * * *

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, pursuant to a vote of the Commission, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES

Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing lease being under consideration it was "VOTED, that the lease of the East Boston Tunnel Extension in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the Acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

CAMBRIDGE CONNECTION.

THE CONTRACT FOR THE USE OF THE CAMBRIDGE CONNECTION, SO-CALLED.

I.—This contract made this seventh day of December Parties. in the year nineteen hundred and eleven by and between the city of Boston, hereinafter called the city, acting by the Boston Transit Commission, hereinafter called the commission, under and by virtue of two acts of the Commonwealth of Massachusetts, one being entitled “An St. 1906, c. 520, s. 23. Act to Authorize the Boston Elevated Railway Company to Construct a Subway or Subways in the City of Cambridge and to Provide for Connection Thereof with the Railway System in the City of Boston,” being chapter five hundred and twenty of the acts of the year nineteen hundred and six, and the other being entitled “An Act Relative to Electric Railway Trans- St. 1911, c. 741. portation Facilities in the City of Boston and its Vicinity,” being chapter seven hundred and forty-one of the acts of the year nineteen hundred and eleven, said two acts being hereinafter called the acts, and the Boston Elevated Railway Company, hereinafter called the company, witnesseth as follows:

II.—The city, pursuant to the acts and in consideration of Grant. St. 1906, c. 520, s. 23. the covenants and agreements herein contained, grants to the company the sole and exclusive use of the tunnel and St. 1911, c. 741, s. 30. its appurtenances and terminals now being constructed Premises. under authority of section twenty-three of chapter five hundred and twenty of the acts of the year nineteen hundred and six, being the Cambridge Connection, so called, and hereinafter called the premises, for the running of its elevated trains and surface cars therein and such other uses Uses. as are hereinafter specified.

[Chap. 741, Acts of 1911.]

AN ACT RELATIVE TO ELECTRIC RAILWAY TRANSPORTATION FACILITIES IN THE CITY OF BOSTON AND ITS VICINITY.

* * * * *

East Boston Tunnel Extension.

SECTION 10. The commission (a) shall extend the East Boston tunnel by constructing a tunnel and subway (to be designated as the East Boston tunnel extension) connecting with the existing East Boston tunnel at grade or otherwise, so designed as to be adapted to contain two railway tracks, beginning at or near the present terminus of the East Boston tunnel in Court street near Scollay square; thence under Court street to and through Scollay square; thence under Tremont Row and under Court street to, under and through Bowdoin square, and thence under Cambridge street to a suitable connection with surface tracks in Cambridge street at a point at or near Lynde street, or at or near North Russell street, or between said streets, together with a station in or near Scollay square and a station in or near Bowdoin square, and with suitable approaches, sidings, entrances, elevators, inclines, connections and other structures; and the commission may, with the consent of the company (b), make any changes which it deems necessary or expedient in the existing subway and tunnel and such alterations or enlargements in the existing subway station in Scollay square and Court street and in the exits and entrances therefrom and thereto, as it may deem necessary or expedient. To provide for the connection of the tunnel extension with the surface tracks in Cambridge street, the commission, acting for this purpose in place of, and with all the powers of the board of street commissioners of the city of Boston and of the officer authorized to construct streets by chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, may widen, alter and construct Cambridge street in such manner as the commission may deem necessary or advisable, and may assess betterments for the improvement under section five of said chapter.

SECTION 11. The commission shall not begin the work of construction until it has filed in the office of the commissioner of public works of the city a plan signed by the commission showing the proposed route or the location thereof, and the general form and method of construction, the location of proposed tracks, stations and approaches, and the alignment and grade, which plan shall be submitted to the company for its examination, nor until the contract hereinafter mentioned for the use of said East Boston Tunnel extension has been executed. Any such plan so filed may be altered at any time by a new plan signed, submitted and filed in like manner.

SECTION 12. Within the time and upon the terms specified in Part II of this act, the commission, in the name and on behalf of the city of Boston, and the company shall execute a contract in writing for the sole and exclusive use of the East Boston tunnel extension by the company for the running of its cars therein, and for such other uses as the commission and the company may agree upon, for a term of years and at an annual rental

(a) Boston Transit Commission.

(b) Boston Elevated Railway Company.

as specified in Part II of this act, upon such provisions and conditions not affecting the term or rental, and following the form of the contract made by and between the city, acting by the commission, and the company for the use of the Washington street tunnel, so far as the same may be applicable, as the commission and the company may agree upon, or, in case of difference, as the board [of Railroad Commissioners] may determine. The provisions of Part I of this act in so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of the tunnel extension shall be embodied in and made a part of said contract. The use of the tunnel extension shall begin when, in the opinion of the commission, a reasonable time after completion has been allowed for equipment. The net cost thereof shall be deemed to include, except as is otherwise provided herein, all expenditures incurred in acquisition and construction and in making necessary changes in the East Boston tunnel, including damages, expenses (except damages and all other expenses for lands and rights in lands, or otherwise incurred, for the widening of Cambridge street, one-half of which damages and expenses, less the betterments the city shall pay, in the same manner as for other work done under said chapter three hundred and ninety-three of the acts of the year nineteen hundred and six, and one-half of which shall be considered as part of the cost of the tunnel extension and be paid for out of the proceeds of bonds issued under section thirteen), and salaries of the commission and the interest on the debt incurred in construction prior to the beginning of the use.

SECTION 13. The treasurer of the city of Boston shall, from time to time, on the request of the commission, issue and sell at public or private sale the bonds of the city, registered or with interest coupons attached, as he may deem best, to an amount not exceeding the cost of the tunnel and subway provided for by section ten of this act. Such bonds shall be designated on their face East Boston Tunnel Extension Bonds; shall be for such terms, not exceeding forty-five years, as the mayor and treasurer of the city may determine; and shall bear interest payable semi-annually, at such rate, not exceeding four per cent per annum, as the treasurer shall determine. The proceeds of such bonds, including any premiums realized from the sale thereof, shall be used to meet all damages, costs and expenses incurred by the commission or by the city, except as aforesaid, in carrying out the provisions of this act relative to the construction of the said tunnel extension. The proceeds of any sale or sales of lands or rights taken or otherwise acquired under authority of this act for the construction of said tunnel extension (except lands and rights in land taken or purchased for the widening of Cambridge street, which shall be applied in reduction of the damages and expenses incurred for said widening), shall be used for the same purpose as the rentals of said tunnel extension, or shall be used for the payment of expenditures incurred for construction, as the commission may determine. All rentals, tolls, percentages or other annual compensation received by the city for any use of said tunnel extension under this act, and for any use of any lands or rights acquired under authority of this act for said tunnel extension, except as

aforsaid, shall be used in the first instance for the payment of interest on the bonds issued for the cost of said tunnel extension, and the balance shall be applied to the purposes specified in Part II of this act. Any interest received by the city upon the proceeds of the bonds, prior to the expenditure of such proceeds, shall be credited against interest during construction in ascertaining the net cost of the said tunnel extension. The city shall have, hold and enjoy in its private or proprietary capacity, for its own property, the said subway and tunnel extension, and all rents, tolls, income and profits from all contracts entered into by it for the use of said subway and tunnel extension or any part thereof, and the same shall never be taken by the commonwealth except on payment of just compensation.

SECTION 14. The commission shall, immediately after the passage of this act, make such preliminary investigations, surveys and plans as it may deem expedient, and to that end may enter upon any lands, and place and maintain marks therein, and may make excavations and borings, and do all other acts necessary for such investigations and surveys, and may expend such sums as it deems necessary therefor. The expenses incurred in making such preliminary investigations, surveys and plans to an amount not exceeding fifty thousand dollars shall be paid from the proceeds of the Riverbank subway bonds. Upon the construction of the respective tunnels and subways herein provided for such expenses shall be deemed a part of the cost thereof, and shall be charged to the respective subways and tunnels for which the expense was incurred.

SECTION 15. The construction of the Dorchester tunnel, the Boylston street subway and the East Boston tunnel extension, hereinbefore authorized, shall be begun, in each respective case, immediately after the contract for the use of such tunnel or subway has been executed by the commission and the company.

SECTION 16. In connection with the construction of any tunnel or subway authorized by this act the commission may, for the purpose of avoiding objectionable curves or any practical or legal obstacles, vary or alter the routes herein respectively prescribed for the tunnels and subways, and for the said purposes may locate the tunnels, subways and stations or any of them, in whole or in part, on private or public lands. The commission may also, in connection with any tunnel or subway, construct such approaches, sidings, spur tracks, loops, entrances, inclines, elevators, connections and other structures as it may deem necessary. The commission may, with the consent of the company, make such alterations in the existing tunnels and subways, including stations and exits and entrances thereof, as it may deem necessary or advisable.

SECTION 17. The commission may make contracts in the name of the city for the work herein authorized, but all contracts involving two thousand dollars or more in amount shall be in writing and signed by a majority of the commission; and no such contract shall be altered except by an instrument in writing, signed by the contractor and a majority of the commission, and also by the sureties, if any, on the bond given by the contractor for the completion of the original contract. No such contract, and no alteration of any such contract, shall be valid or binding on the city unless executed in the manner aforesaid.

SECTION 18. All work done under this act, under or near public streets and places shall be conducted, so far as may be practicable, in such manner as to leave such streets and places, or a reasonable part thereof, open for traffic between the hours of seven in the forenoon and six in the afternoon of each secular day, except legal holidays.

SECTION 19. The commission may, for the purposes of this act, use public ways and lands without compensation therefor, and may take, or acquire by purchase or otherwise for the city, lands in fee, and easements, estates and rights in land, including the right to go under the surface thereof or through or under buildings or parts of buildings thereon; and such taking in fee or otherwise may be made whether the lands taken or otherwise affected are held under or by title derived under eminent domain or otherwise, and may be made for the purpose of providing locations for pipes, wires, conduits, and other structures the relocation of which is made necessary or expedient by the construction of any subway or tunnel authorized by this act. A taking under this section of an easement or other estate or right in a given parcel of real estate, whether such parcel consists of unimproved land or of land and buildings, may be confined to a portion or section of such parcel fixed by planes or other surfaces of division, below, above, or at the surface of the soil; and in such case no taking need be made of upper or lower portions or sections, except of such easements therein, if any, as the commission may deem necessary. The commission, to make any taking by right of eminent domain, shall cause to be recorded in the registry of deeds for the county of Suffolk a description of the lands, easements, estates or rights to be taken, as certain as is required in a common conveyance of land, with the statement that the same are taken under authority of this act, which description and statement shall be signed by the commission; and the lands, easements, estates or rights therein described shall upon such recording be taken for and shall vest in the city. The commission shall, so far as may be practicable, notify all known owners of such taking, but the validity thereof shall not be affected by want of such notice.

SECTION 20. The commission may sell the buildings and other structures upon any lands acquired by it, or may remove the same; and shall sell, if a sale be practicable, or if not shall lease, any lands, or rights or interests in land or other property acquired for the purposes of this act, whenever the same shall, in the opinion of the commission, cease to be needed for such purposes. The proceeds of such sales and leases, and the fair valuation of any such lands or other property no longer needed for the said purposes, but not actually sold, as agreed upon by the commission and the company, or in case of difference as determined by the board, shall be deducted from the cost of the tunnel or subway for the construction of which such lands or other property were acquired, for the purpose of ascertaining the rental thereof.

SECTION 21. The commission shall determine and award the damages sustained by any person by reason of property taken or injured by the commission under authority of this act, except public ways or lands, and may agree with any such person as to the amount of his damages, which amount the city shall be liable to pay. If any such person is dissatisfied with such award, or cannot agree with the commission upon his

Equipment.

VI.—The company shall suitably lay and maintain in first-class condition railway tracks in proper places in the premises, together with the appointments and apparatus necessary for the safe and convenient operation of the same and shall provide and maintain all wires, electrical or other apparatus or equipment necessary or convenient for the furnishing of power and light therein and shall further provide requisite pumps, fans and ventilating apparatus and in general shall completely equip and furnish the premises with all machinery, piping, apparatus and furniture proper and adapted thereto and necessary for the convenient maintenance and operation of a railway therein and for the safety and accommodation of the passengers upon such railway.

All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

Repairs.

VII.—The company shall maintain the premises, except as to repairs below excepted, in good order and condition as a structure complete so far as consistent with the provisions of the act, and adapted to the maintenance and use of lines of railway, and shall at all reasonable times be entitled to a permit to open the streets and other public grounds of the city for the purpose of making requisite repairs to the premises, and when the right of the company or its assigns to use the premises shall terminate shall restore them to the city in good condition except as to repairs not obligatory upon the company.

All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city

pany shall have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws now or hereafter in force applicable to it. To provide for proper connections of the tracks in any subway or tunnel authorized by this act with surface tracks, the company may make such alterations or extensions of its surface tracks and appurtenances as the board may approve.

SECTION 25. Upon the determination by the commission of any important question relating to any plan or work herein provided for, except an award of or agreement upon damages, as provided in section twenty-one hereof, the company may, within three days after notice of such determination, apply to the board for a revision of the same, and thereupon the board may consider and finally determine such question.

SECTION 26. The supreme judicial court and the superior court, upon application of any party in interest, including the city, the commission, the company or any ten taxable inhabitants of the city, may enforce or prevent violation of the foregoing provisions of this act by any appropriate process.

* * * * *

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, pursuant to a vote of the Commission, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES

Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

Equipment.

VI.—The company shall suitably lay and maintain in first-class condition railway tracks in proper places in the premises, together with the appointments and apparatus necessary for the safe and convenient operation of the same and shall provide and maintain all wires, electrical or other apparatus or equipment necessary or convenient for the furnishing of power and light therein and shall further provide requisite pumps, fans and ventilating apparatus and in general shall completely equip and furnish the premises with all machinery, piping, apparatus and furniture proper and adapted thereto and necessary for the convenient maintenance and operation of a railway therein and for the safety and accommodation of the passengers upon such railway.

All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

Repairs.

VII.—The company shall maintain the premises, except as to repairs below excepted, in good order and condition as a structure complete so far as consistent with the provisions of the act, and adapted to the maintenance and use of lines of railway, and shall at all reasonable times be entitled to a permit to open the streets and other public grounds of the city for the purpose of making requisite repairs to the premises, and when the right of the company or its assigns to use the premises shall terminate shall restore them to the city in good condition except as to repairs not obligatory upon the company.

All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city

or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; and if repairs shall be made necessary by any of said excepted causes then such repairs shall be made by the company and the reasonable cost and expense thereof deducted from the rental subsequently payable.

VIII.—The city shall not be responsible to the company ^{Liability for damages.} for damages of any description resulting from any defects in the premises, whether structural or arising out of want of repair or from any cause after the use of the same by the company has begun as hereinbefore provided, unless such damage result from the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; nor shall it be responsible for any damages resulting to persons or property in the operation and use of the premises, including all parts thereof, whether on property belonging to the city or upon property the fee of which belongs to other parties, and the company shall hold the city harmless and indemnified therefrom and shall at its own expense upon due notice from the city defend all suits and other proceedings of every description, whether at law or in equity, which may be brought against the city, its officers, servants or agents by reason of any liability arising out of the operation and use of any portion of the premises or of the railways, machinery and apparatus therein and accruing after the right to use such portion has begun as herein provided, and shall satisfy all final judgments of legal tribunals rendered in such suits and proceedings. The foregoing provisions shall not be construed to impose any liability or obligation upon the company for any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried

Equipment.

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All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city

or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; and if repairs shall be made necessary by any of said excepted causes then such repairs shall be made by the company and the reasonable cost and expense thereof deducted from the rental subsequently payable.

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All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

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on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises.

Premises to be kept clean.

IX.—The company shall keep the premises thoroughly clean and free from unnecessary dampness, and the approaches to stations clean and free from ice and snow. When the premises are in use it shall suitably light the same in all parts, and by means of artificial ventilation shall keep the air adequately pure for health and comfort, unless such artificial ventilation is deemed by the board to be unnecessary.

Changes in premises.

X.—The company within the limitations of the acts may make such alterations in or additions to the premises as may be approved by the commission.

Sundry uses.

XI.—To the extent of the power of the company so to do and the power of the commission to contract therefor, the company may place and maintain in the premises booths for the sale of newspapers, magazines, periodicals and books, and in places specially adapted therefor may place or admit unobjectionable advertisements, and may make such other uses of the premises, not impairing the use for transportation of passengers, as the board may from time to time approve; provided however that such booths and advertisements shall not be so placed or used as to diminish or impair the safety, accommodation, convenience or comfort of passengers using the premises; and the company agrees that upon receipt of notice in writing at any time or from time to time from the board that in its opinion any of the uses above referred to or approved, either in whole or in part, in any way diminish or impair such safety, accommodation, convenience or comfort or conflict in any way with the best interests of the public, it will forthwith to the extent specified in the notice discontinue such use.

Newspaper booths and advertisements.

XII.—The company, upon such terms as it may deem expedient, may permit any person or corporation not authorized to carry on a railway business but authorized to use and maintain wires, conduits, tubes or similar structures along the route of the premises, to place such wires, conduits, tubes or similar structures within a corresponding portion of the premises used by the company, but only to such extent and for such time as may be practicable without interfering with the safe and convenient operation of the railway and other apparatus which the company is hereby authorized to put therein, but the privilege shall not extend to gas or water pipes.

Wires, conduit
and tubes.

Except as above provided the company shall not have the right to place in the premises or attach thereto any structures, machinery, merchandise, apparatus, advertisements or property of any sort which are not necessary or proper for the operation of its railway therein and the performance of its agreements herein contained.

XIII.—The city may without charge place in the premises such wires and apparatus as may be necessary for its police and fire-alarm service, to be used, however, exclusively for such service, and to be so located as not to interfere with the use of the premises which the company is hereby authorized to make. The location, construction, maintenance and repair of such wires and apparatus shall be subject to such reasonable directions and regulations as the company may impose, or, in case of any disagreement, as the commission may determine.

Police and
Fire Alarm
Service.
St. 1906, c. 520,
s. 23.

XIV.—In the event of the failure of the company or its assigns to pay the rental for three months after such rental shall have become due, or in the event of a failure to maintain and operate a railway within the premises and if such failure shall have continued for three months, then in either of said events the city upon three months' notice, such default still continuing, shall have the right to terminate this contract and to re-enter upon and repossess itself of the premises, unless such failure to maintain and operate grows out of the act of God, of public enemies, of mobs or of riots; or grows out of works or excavations carried on or permitted by the city or other public authority; or grows out of explosions or the bursting of pipes outside the premises,

Default and
penalty.

the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or grows out of the location, maintenance or use of the wires or other apparatus which the city is herein authorized to maintain in the premises. In case the right of re-entry and repossession above given shall be exercised, all the tracks, wires, apparatus, equipment and other property in the nature of fixtures of the company or its assigns within the premises may be taken by the city and be paid for by it at a valuation to be determined as herein provided for the occasion when the same are to be surrendered by the company at the expiration of the term of this contract.

**Removal of
property by
railway com-
pany.**

XV.—The company shall have no right at any time to remove from the premises any tracks, wires, apparatus, equipment or other property necessary to the use and maintenance of the premises and the operation of a railway therein, except for the purpose of repairs or renewal or for the substitution of equivalent structures, property, apparatus or equipment.

**Inspection by
public officials.**

XVI.—The governor of the commonwealth, the mayor and commissioner of public works of the city, and the members of the board and of the commission, and their respective engineers shall at all times have free entry to the premises for the purpose of inspecting the same.

Arbitration.

XVII.—In case of disagreement between the city acting by its mayor and the company as to the amount due for rental, or as to the suspension or abatement thereof as herein provided, or as to the valuation of the property upon the termination of the use herein contracted for, the matter in dispute shall be left to the decision of three persons, one to be selected by the mayor of the city, one to be selected by the company and the third by the two thus chosen. The report of the arbitrators or the majority of them shall be binding upon the parties hereto.

**Termination of
the existence
of the commis-
sion.**

XVIII.—In respect of all matters arising under this contract where provision is made for action by the commission

or its approval of acts to be done by the company is required, it is provided and agreed that upon the termination of the existence of the commission the authority to take such action shall vest in the city, which shall have all the rights, powers and privileges and be subject to all the duties, restrictions and liabilities herein conferred or imposed upon the commission in respect thereof; such powers to be exercised by the mayor, commissioner of public works and city treasurer in place of the commission or by such other officers as the city council may prescribe.

XIX.—With respect to the equipment, use and operation of the railway to be located in the premises and transportation thereon, the company is to have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws which now are or hereafter may be in force applicable to it. The company to be subject to law.

XX.—The use and control of the premises under this contract is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law. Rights of West End Street Railway Company. St. 1911, c. 741, s. 40.

XXI.—This contract shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may at any time have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this contract nor shall it be diminished because of the fact that without this contract the connection between different parts of said properties might be cut off. Right of Commonwealth or City to take by Eminent Domain.

XXII.—It is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the acts in the form and as approved on the twenty-third day of June, nineteen hundred and six, and on the twentieth day of July, nineteen hundred and eleven, respectively, is and shall be void and of no effect. Controlling effect of the Acts.

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, pursuant to a vote of the Commission, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES
Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing lease being under consideration it was

"VOTED, that the lease of the Cambridge Connection in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the afore-said leases and extensions of leases being those authorized by Chapter 741 of the acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

Boston, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

EXTENSION OF THE CONTRACT FOR THE USE OF THE TREMONT STREET SUBWAY.

I.—This contract made this seventh day of December ^{Parties.} in the year nineteen hundred and eleven by and between the city of Boston, hereinafter called the city, acting by the Boston Transit Commission, hereinafter called the commission, under and by virtue of an act of the Commonwealth of Massachusetts entitled "An Act ^{St. 1911, c. 741.} Relative to Electric Railway Transportation Facilities in the City of Boston and its Vicinity," being chapter seven hundred and forty-one of the acts of the year nineteen hundred and eleven, hereinafter called the act, and the Boston Elevated Railway Company, hereinafter called the company, witnesseth as follows:

II.—The contract between the city and the West End ^{Extension of contract.} Street Railway Company for the use of the Tremont street ^{St. 1911, c. 741, s. 27.} subway, dated December 7, 1896, which contract was, by an instrument dated December 9, 1897, assigned by the West End Street Railway Company to the Boston Elevated Railway Company, is extended from its expiration to the first day of July, nineteen hundred and thirty-six, and thereafter is to continue unless or until terminated as follows:

All contracts for the use of the Tremont street subway, the ^{St. 1911, c. 741, s. 34.} East Boston tunnel, the Washington street tunnel, the tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of

Beginning of Use.St. 1906, c. 520,
s. 23.

III.—The use shall begin when in the opinion of the commission a reasonable time after completion has been allowed for equipment.

Term.St. 1911, c. 741,
s. 30.

IV.—The term of years of the use shall extend from the beginning of the use to the first day of July, nineteen hundred and thirty-six, and thereafter is to continue unless or until terminated as follows:

St. 1911, c. 741,
s. 34.

All contracts for the use of the Tremont street subway, the East Boston tunnel, the Washington street tunnel, the tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of the city, approved by the board of Railroad Commissioners, hereinafter called the board. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.St. 1906, c. 520,
s. 23.St. 1911, c. 741,
s. 30.

V.—The rental for a period of twenty years from the beginning of use shall be at the rate of four and seven-eighths per cent. per annum upon the net cost and thereafter shall be at the rate of four and one-half per cent. per annum upon the net cost.

St. 1906, c. 520,
s. 23.St. 1902, c. 534,
s. 7.St. 1911, c. 741,
s. 20.

The net cost shall be deemed to include all expenditures incurred in acquisition and construction including damages, expenses and salaries of the commission, and

interest at the rate of four per cent. per annum on the debt incurred in construction prior to the beginning of the use. It shall also include the cost of enlarging by not more than one-third the width of the existing entrances to and exits from the Park street station. For the purpose of ascertaining the rental, there shall be deducted from the cost the proceeds of sales of buildings, lands, rights or interests in lands or other property acquired in connection with the construction of the premises and the fair valuation of any such lands and other property no longer needed for the purposes of the Cambridge Connection but not actually sold, as agreed upon by the commission and the company or in case of difference as determined by the board.

The rental shall begin when the use begins.

The rental shall be paid to the city in quarterly payments on the last day of December, March, June and September in each year and at the rate aforesaid for any uncompleted quarter of a year.

If at any time during the continuance of the term of this contract the company shall be deprived in whole or in part of the use of the premises by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; then the rental or a just and reasonable part thereof, as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, shall be suspended or abated during such deprivation.

Equipment.

VI.—The company shall suitably lay and maintain in first-class condition railway tracks in proper places in the premises, together with the appointments and apparatus necessary for the safe and convenient operation of the same and shall provide and maintain all wires, electrical or other apparatus or equipment necessary or convenient for the furnishing of power and light therein and shall further provide requisite pumps, fans and ventilating apparatus and in general shall completely equip and furnish the premises with all machinery, piping, apparatus and furniture proper and adapted thereto and necessary for the convenient maintenance and operation of a railway therein and for the safety and accommodation of the passengers upon such railway.

All tracks, wires, appliances, fixtures, machinery, equipment, furniture and apparatus provided by the company shall be and remain the property of the company so long as it continues to occupy and use the premises under the provisions of this contract, and upon the termination of such use the city hereby agrees to take and pay for all such property at its then fair value as agreed upon by the mayor of the city and the company or in case of difference as determined by arbitration as hereinafter provided, and the company agrees to deliver to the city all such property at such valuation.

Repairs.

VII.—The company shall maintain the premises, except as to repairs below excepted, in good order and condition as a structure complete so far as consistent with the provisions of the act, and adapted to the maintenance and use of lines of railway, and shall at all reasonable times be entitled to a permit to open the streets and other public grounds of the city for the purpose of making requisite repairs to the premises, and when the right of the company or its assigns to use the premises shall terminate shall restore them to the city in good condition except as to repairs not obligatory upon the company.

All repairs to the premises shall be at the sole cost and expense of the company except such repairs as are made necessary by any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried on or permitted by the city

or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; and if repairs shall be made necessary by any of said excepted causes then such repairs shall be made by the company and the reasonable cost and expense thereof deducted from the rental subsequently payable.

VIII.—The city shall not be responsible to the company ^{Liability for damages.} for damages of any description resulting from any defects in the premises, whether structural or arising out of want of repair or from any cause after the use of the same by the company has begun as hereinbefore provided, unless such damage result from the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises; nor shall it be responsible for any damages resulting to persons or property in the operation and use of the premises, including all parts thereof, whether on property belonging to the city or upon property the fee of which belongs to other parties, and the company shall hold the city harmless and indemnified therefrom and shall at its own expense upon due notice from the city defend all suits and other proceedings of every description, whether at law or in equity, which may be brought against the city, its officers, servants or agents by reason of any liability arising out of the operation and use of any portion of the premises or of the railways, machinery and apparatus therein and accruing after the right to use such portion has begun as herein provided, and shall satisfy all final judgments of legal tribunals rendered in such suits and proceedings. The foregoing provisions shall not be construed to impose any liability or obligation upon the company for any cause growing out of the act of God, of public enemies, of mobs or of riots; or growing out of works or excavations carried

on or permitted by the city or other public authority; or growing out of explosions or the bursting of pipes outside the premises, the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or growing out of the location, maintenance or use of the wires or other apparatus which the city is hereinafter authorized to maintain in the premises.

Premises to be kept clean.

IX.—The company shall keep the premises thoroughly clean and free from unnecessary dampness, and the approaches to stations clean and free from ice and snow. When the premises are in use it shall suitably light the same in all parts, and by means of artificial ventilation shall keep the air adequately pure for health and comfort, unless such artificial ventilation is deemed by the board to be unnecessary.

Changes in premises.

X.—The company within the limitations of the acts may make such alterations in or additions to the premises as may be approved by the commission.

Sundry uses.

XI.—To the extent of the power of the company so to do and the power of the commission to contract therefor, the company may place and maintain in the premises booths for the sale of newspapers, magazines, periodicals and books, and in places specially adapted therefor may place or admit unobjectionable advertisements, and may make such other uses of the premises, not impairing the use for transportation of passengers, as the board may from time to time approve; provided however that such booths and advertisements shall not be so placed or used as to diminish or impair the safety, accommodation, convenience or comfort of passengers using the premises; and the company agrees that upon receipt of notice in writing at any time or from time to time from the board that in its opinion any of the uses above referred to or approved, either in whole or in part, in any way diminish or impair such safety, accommodation, convenience or comfort or conflict in any way with the best interests of the public, it will forthwith to the extent specified in the notice discontinue such use.

Newspaper booths and advertisements.

XII.—The company, upon such terms as it may deem expedient, may permit any person or corporation not authorized to carry on a railway business but authorized to use and maintain wires, conduits, tubes or similar structures along the route of the premises, to place such wires, conduits, tubes or similar structures within a corresponding portion of the premises used by the company, but only to such extent and for such time as may be practicable without interfering with the safe and convenient operation of the railway and other apparatus which the company is hereby authorized to put therein, but the privilege shall not extend to gas or water pipes.

Wires, conduit
and tubes.

Except as above provided the company shall not have the right to place in the premises or attach thereto any structures, machinery, merchandise, apparatus, advertisements or property of any sort which are not necessary or proper for the operation of its railway therein and the performance of its agreements herein contained.

XIII.—The city may without charge place in the premises such wires and apparatus as may be necessary for its police and fire-alarm service, to be used, however, exclusively for such service, and to be so located as not to interfere with the use of the premises which the company is hereby authorized to make. The location, construction, maintenance and repair of such wires and apparatus shall be subject to such reasonable directions and regulations as the company may impose, or, in case of any disagreement, as the commission may determine.

Police and
Fire Alarm
Service.
St. 1906, c. 520,
s. 23.

XIV.—In the event of the failure of the company or its assigns to pay the rental for three months after such rental shall have become due, or in the event of a failure to maintain and operate a railway within the premises and if such failure shall have continued for three months, then in either of said events the city upon three months' notice, such default still continuing, shall have the right to terminate this contract and to re-enter upon and repossess itself of the premises, unless such failure to maintain and operate grows out of the act of God, of public enemies, of mobs or of riots; or grows out of works or excavations carried on or permitted by the city or other public authority; or grows out of explosions or the bursting of pipes outside the premises,

Default and
penalty.

the falling or settling of buildings, the filling or caving in or other physical obstruction of the premises or any part thereof not due to any act of the company, or its agents, servants or licensees, in the use of the premises, or to any negligence on its or their part, or to any failure of the company to maintain the premises in good order and condition as herein provided; or grows out of the location, maintenance or use of the wires or other apparatus which the city is herein authorized to maintain in the premises. In case the right of re-entry and repossession above given shall be exercised, all the tracks, wires, apparatus, equipment and other property in the nature of fixtures of the company or its assigns within the premises may be taken by the city and be paid for by it at a valuation to be determined as herein provided for the occasion when the same are to be surrendered by the company at the expiration of the term of this contract.

Removal of
property by
railway com-
pany.

XV.—The company shall have no right at any time to remove from the premises any tracks, wires, apparatus, equipment or other property necessary to the use and maintenance of the premises and the operation of a railway therein, except for the purpose of repairs or renewal or for the substitution of equivalent structures, property, apparatus or equipment.

Inspection by
public officials.

XVI.—The governor of the commonwealth, the mayor and commissioner of public works of the city, and the members of the board and of the commission, and their respective engineers shall at all times have free entry to the premises for the purpose of inspecting the same.

Arbitration.

XVII.—In case of disagreement between the city acting by its mayor and the company as to the amount due for rental, or as to the suspension or abatement thereof as herein provided, or as to the valuation of the property upon the termination of the use herein contracted for, the matter in dispute shall be left to the decision of three persons, one to be selected by the mayor of the city, one to be selected by the company and the third by the two thus chosen. The report of the arbitrators or the majority of them shall be binding upon the parties hereto.

Termination of
the existence
of the commis-
sion.

XVIII.—In respect of all matters arising under this contract where provision is made for action by the commission

or its approval of acts to be done by the company is required, it is provided and agreed that upon the termination of the existence of the commission the authority to take such action shall vest in the city, which shall have all the rights, powers and privileges and be subject to all the duties, restrictions and liabilities herein conferred or imposed upon the commission in respect thereof; such powers to be exercised by the mayor, commissioner of public works and city treasurer in place of the commission or by such other officers as the city council may prescribe.

XIX.—With respect to the equipment, use and operation of the railway to be located in the premises and transportation thereon, the company is to have all the powers and privileges and be subject to all the duties, liabilities, restrictions and provisions set forth in general and special laws which now are or hereafter may be in force applicable to it. The company to be subject to law.

XX.—The use and control of the premises under this contract is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law. Rights of West End Street Railway Company. St. 1911, c. 741, s. 40.

XXI.—This contract shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may at any time have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this contract nor shall it be diminished because of the fact that without this contract the connection between different parts of said properties might be cut off. Right of Commonwealth or City to take by Eminent Domain.

XXII.—It is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the acts in the form and as approved on the twenty-third day of June, nineteen hundred and six, and on the twentieth day of July, nineteen hundred and eleven, respectively, is and shall be void and of no effect. Controlling effect of the Acts.

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, pursuant to a vote of the Commission, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES
Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing lease being under consideration it was

"VOTED, that the lease of the Cambridge Connection in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

EXTENSION OF THE CONTRACT FOR THE USE OF THE TREMONT STREET SUBWAY.

I.—This contract made this seventh day of December ^{Parties.} in the year nineteen hundred and eleven by and between the city of Boston, hereinafter called the city, acting by the Boston Transit Commission, hereinafter called the commission, under and by virtue of an act of the Commonwealth of Massachusetts entitled “An Act ^{St. 1911, c. 741.} Relative to Electric Railway Transportation Facilities in the City of Boston and its Vicinity,” being chapter seven hundred and forty-one of the acts of the year nineteen hundred and eleven, hereinafter called the act, and the Boston Elevated Railway Company, hereinafter called the company, witnesseth as follows:

II.—The contract between the city and the West End ^{Extension of contract.} Street Railway Company for the use of the Tremont street ^{St. 1911, c. 741,} subway, dated December 7, 1896, which contract was, by an ^{S. 27.} instrument dated December 9, 1897, assigned by the West End Street Railway Company to the Boston Elevated Railway Company, is extended from its expiration to the first day of July, nineteen hundred and thirty-six, and thereafter is to continue unless or until terminated as follows:

All contracts for the use of the Tremont street subway, the ^{St. 1911, c. 741,} East Boston tunnel, the Washington street tunnel, the ^{S. 34.} tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council of

the city, approved by the board of Railroad Commissioners. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.
St. 1911, c. 741,
s. 27.

III.—The rental of said Tremont street subway from and after the expiration of the said existing contract shall be a sum equal to four and one-half per cent. per annum upon the net cost thereof.

St. 1911, c. 741,
s. 5.

The cost of enlarging the present Tremont street subway, if that is done, or of building a separate subway, as below provided, shall be included in the cost of the Boylston Street subway.

Connections
with and
enlargement
of Tremont
street subway.
St. 1911, c. 741,
s. 5.

IV.—Instead of constructing the Boylston Street subway as a continuous line from Arlington street to Park street station, the commission may connect said Boylston Street subway at or near the junction of Boylston street and Tremont street with the tracks of the present Tremont street subway and between that point and the Park street station may either enlarge the present Tremont street subway so as to provide for two additional tracks or may construct a separate subway adapted to contain two railway tracks connecting the same with the present Tremont street subway and the tracks located therein.

Rights of West
End Street
Railway
Company.
St. 1911, c. 740,
s. 16.
St. 1911, c. 741,
s. 40.

V.—The use and control of the Tremont street subway under this extension is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law.

Alterations in
Tremont Street
Subway.
St. 1911, c. 741,
s. 5.

VI.—In connection with the construction of the proposed Boylston Street subway, changes and alterations may be made in the Tremont street subway so far as authorized by the act, and in conformity with and subject to the provisions of sections fifteen and sixteen of chapter seven hundred and forty of the acts of the year nineteen hundred and eleven, being "An Act to Authorize the Consolidation

of Properties and Franchises of the Boston Elevated Railway Company and the West End Street Railway Company."

VII.—This extension shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth, may, at any time, have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this extension, nor shall it be diminished because of the fact that without such extension the connection between different parts of its properties might be cut off.

Right of Commonwealth or City to Take by Eminent Domain.
St. 1911, c. 741, s. 39.

VIII.—Except as hereinbefore and in the act provided the terms and conditions set forth in said contract between the city and the West End Street Railway Company shall remain in full force and effect and bind the parties hereto during the extended term.

Terms and conditions.
St. 1911, c. 741, s. 27.

IX.—This agreement is made pursuant to the authority and is intended to be in accordance with the provisions of the laws relating thereto. It is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the act in the form and as approved on the twentieth day of July, nineteen hundred and eleven, is and shall be void and of no effect.

Statutory limitations.

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, hereunto authorized by the act, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES

Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing extension of lease being under consideration it was

"VOTED, that the extension of the lease of the Tremont Street subway in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the Acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

EXTENSION OF THE LEASE FOR THE USE OF THE EAST BOSTON TUNNEL.

I.—This contract made this seventh day of December ^{Parties.} in the year nineteen hundred and eleven by and between the city of Boston, hereinafter called the city, acting by the Boston Transit Commission, hereinafter called the commission, under and by virtue of an act of the Commonwealth of Massachusetts entitled "An Act Relative to Electric Railway Transportation Facilities in the City of Boston and its Vicinity," being chapter seven hundred and forty-^{St. 1911, c. 741.} one of the acts of the year nineteen hundred and eleven, hereinafter called the act, and the Boston Elevated Railway Company, hereinafter called the company, witnesseth as follows:

II.—The existing lease from the city to the company of the ^{Extension of} East Boston tunnel is extended from the tenth day of June, ^{lease.} ^{St. 1911, c. 741,} nineteen hundred and twenty-two, to the first day of July, ^{s. 28.} nineteen hundred and thirty-six, and thereafter is to continue unless or until terminated as follows:

All contracts for the use of the Tremont street subway, ^{St. 1911, c. 741,} the East Boston tunnel, the Washington street tunnel, the ^{s. 34.} tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or

if directed so to do by a vote of the city council of the city, approved by the board of Railroad Commissioners. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.
St. 1911, c. 741,
s. 28.

III.—The rental of said East Boston tunnel from and after the expiration of the present lease shall be a sum equal to four and one-half per cent. per annum upon the net cost thereof, to be paid to the city in quarterly payments on the last day of December, March, June and September in each year, and at the rate aforesaid for any uncompleted quarter of a year. The company shall be under no obligation after the tenth day of June, nineteen hundred and twenty-two, to collect as agent for the city the toll from passengers passing through the tunnel provided for by chapter five hundred of the acts of the year eighteen hundred and ninety-seven.

**Right of
Commonwealth
or City to take
by Eminent
Domain.**
St. 1911, c. 741,
s. 39.

IV.—This extension shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may, at any time, have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this extension, nor shall it be diminished because of the fact that without such extension the connection between different parts of its properties might be cut off.

**Rights of
West End
Street Railway
Company.**
St. 1911, c. 741,
s. 40.

V.—The use and control of the East Boston tunnel under this extension is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law.

**Alterations in
East Boston
tunnel.**
St. 1911, c. 741,
s. 10.

VII.—In connection with the construction of the proposed East Boston tunnel extension, changes and alterations may be made in the East Boston tunnel so far as authorized by the act.

**Terms and
conditions.**
St. 1911, c. 741,
s. 28.

VII.—Except as hereinbefore and in the act provided the terms and conditions set forth in said contract between

the city and the company shall remain in full force and effect and bind the parties hereto during the extended term.

VIII.—This agreement is made pursuant to the authority ^{Statutory} and is intended to be in accordance with the provisions of the ^{limitations.} laws relating thereto. It is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the act in the form and as approved on the twentieth day of July, nineteen hundred and eleven, is and shall be void and of no effect.

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, hereunto authorized by the act, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES
Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

EXTENSION OF LEASE.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing extension of lease being under consideration it was

"VOTED, that the extension of the lease of the East Boston tunnel in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the Acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

EXTENSION OF THE CONTRACT FOR THE USE OF THE WASHINGTON STREET TUNNEL.

I.—This contract made this seventh day of December ^{Parties.} in the year nineteen hundred and eleven by and between the city of Boston, hereinafter called the city, acting by the Boston Transit Commission, hereinafter called the commission, under and by virtue of an act of the Commonwealth of Massachusetts entitled "An Act ^{St. 1911, c. 741.} Relative to Electric Railway Transportation Facilities in the City of Boston and its Vicinity," being chapter seven hundred and forty-one of the acts of the year nineteen hundred and eleven, hereinafter called the act, and the Boston Elevated Railway Company, hereinafter called the company, witnesseth as follows:

II.—The existing contract between the city and the ^{Extension of contract.} company for the use of the Washington street tunnel is ^{St. 1911, c. 741, s. 29.} extended from its expiration on the thirtieth day of November, nineteen hundred and thirty-three, to the first day of July, nineteen hundred and thirty-six, and thereafter is to continue unless or until terminated as follows:

All contracts for the use of the Tremont street subway, ^{St. 1911, c. 741, s. 34.} the East Boston tunnel, the Washington street tunnel, the tunnel of the Cambridge Connection, the Dorchester tunnel, the Boylston Street subway, and the East Boston tunnel extension shall continue in force after the first day of July, nineteen hundred and thirty-six, upon the same terms and conditions except as to the termination thereof, unless and until said contracts are terminated by notice either from the city of Boston or from the Boston Elevated Railway Company, as hereinafter provided. The city of Boston may terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving at least two years' prior notice in writing, which notice it shall be the duty of the mayor of the city to give if directed so to do by an act of the general court, or if directed so to do by a vote of the city council

of the city, approved by the board of Railroad Commissioners. The Boston Elevated Railway Company may likewise terminate all said contracts on the first day of July, nineteen hundred and thirty-six, or on the first day of July of any year thereafter by giving to the mayor of the city at least two years' prior notice in writing. No notice on the part of either the city or the company shall be given more than three years prior to the date therein fixed for termination.

Rental.

St. 1911, c. 741,
s. 29.

III.—The rental of said Washington street tunnel from and after the expiration of the said existing contract shall be a sum equal to four and one-half per cent. per annum upon the net cost thereof.

Right of Commonwealth or City to Take by Eminent Domain.

St. 1911, c. 741,
s. 39.

IV.—This extension shall not in any respect impair any right which the commonwealth or the city, or any other licensee of the commonwealth may, at any time, have to take the railway properties of the company. In the event of such taking the compensation to be paid to the company shall not be enhanced by reason of this extension, nor shall it be diminished because of the fact that without such extension the connection between different parts of its properties might be cut off.

Rights of West End Street Railway Company.

St. 1911, c. 741,
s. 40.

V.—The use and control of the Washington street tunnel under this extension is subject to the rights, if any, of the West End Street Railway Company under Article II of the existing lease from the West End Street Railway Company to the Boston Elevated Railway Company as modified in accordance with law.

Terms and conditions.

St. 1911, c. 741,
s. 29.

VI.—Except as hereinbefore and in the act provided, the terms and conditions set forth in said contract between the city and the company shall remain in full force and effect and bind the parties hereto during the extended term.

Statutory limitations.

VII.—This agreement is made pursuant to the authority and is intended to be in accordance with the provisions of the laws relating thereto. It is understood and agreed that anything herein contained which is contrary to or inconsistent with the provisions of the act in the form and as approved on the twentieth day of July, nineteen hundred and eleven, is and shall be void and of no effect.

In witness whereof the parties hereto, and to two other instruments of like tenor and effect, have set their hands and seals the day and year first above mentioned, the City of Boston, acting by the Boston Transit Commission, hereunto authorized by the act, its members not being bound in their personal capacity, and the Boston Elevated Railway Company, acting by its President, hereto duly authorized.

THE CITY OF BOSTON BY THE
BOSTON TRANSIT COMMISSION.

By GEORGE G. CROCKER
GEORGE F. SWAIN
(Seal) HORACE G. ALLEN
JOSIAH QUINCY
JAMES B. NOYES
Members of said Commission.

BOSTON ELEVATED RAILWAY COMPANY.

By WILLIAM A. BANCROFT (Seal)
President.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, the foregoing extension of lease being under consideration it was

"VOTED, that the extension of the lease of the Washington Street tunnel in the form now under consideration be executed by the Commission in the name and behalf and under the seal of the City of Boston, and that as evidence thereof the same be signed by members constituting a majority of the Commission."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

At a special meeting of the Directors of the Boston Elevated Railway Company duly called and held on Tuesday, December 5, 1911, at which a quorum was present, the following vote was adopted:

"VOTED: That the President be, and he hereby is, authorized and instructed to execute in the name and on behalf and under the seal of the Company, leases of the Dorchester Tunnel, Boylston Street Subway, East Boston Tunnel Extension, and the Cambridge Connection, and the extensions of the leases of the Tremont Street Subway, East Boston Tunnel and Washington Street Tunnel, in the form submitted to the meeting, with such modifications as he may approve, the aforesaid leases and extensions of leases being those authorized by Chapter 741 of the Acts of the year 1911."

A true copy.

Attest:

(Signed)

HENRY S. LYONS.

Secretary.

At a regular meeting of the Boston Transit Commission held on December 7, 1911, it was

"VOTED, that the Chairman be authorized to acknowledge the foregoing instrument in the name and behalf of the Commission to be the free act and deed of the City of Boston."

Attest:

(Signed)

B. LEIGHTON BEAL.

Secretary.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK SS.

BOSTON, December 7, 1911.

Then personally appeared George G. Crocker, Chairman of the Boston Transit Commission, and acknowledged the foregoing instrument in the name and behalf of said Commission to be the free act and deed of the City of Boston.

Before me,

(Signed)

B. LEIGHTON BEAL.

Justice of the Peace.

APPENDIX D.

BOSTON AND EASTERN TUNNEL LOCATION.

February 15, 1912.

MOVED, that the location including grades and elevations of the tunnel of the Boston & Eastern Electric Railroad be fixed as follows:

The approximate center line of said location begins at a point in that part of the city of Boston, called East Boston, about fourteen hundred ninety-three feet northeasterly of the center line of Porter street at its junction with Orleans street, and about forty-seven feet from the southeasterly line of land of the Boston & Albany Railroad Company, thence passes through land of the East Boston Company, crosses Porter street and passes through a portion of Orleans street, part of said distances being by a curve to the left of thirty minutes (radius 11459 feet), a curve to the right of thirty minutes (radius 11459 feet), a curve to the right of one degree (radius 5730 feet), and a curve to the right of two degrees (radius 2865 feet); thence passes through land of the Boston & Albany Railroad Company lying southerly of the tracks of said company and between them and Orleans street; thence crosses Decatur street near its northwesterly end; thence by a curve to the left of two degrees passes through private land, crosses Maverick street and passes through other private land to a point between Maverick and Sumner streets; thence by a curve to the right of two degrees passes through private land, crosses Sumner street, and passes through private land and land of the Boston & Albany Railroad Company to a point near the easterly line of Webster street continued; thence through land of said Boston & Albany Railroad Company, crosses Marginal street to a point about seventy feet southwesterly of the westerly line of Marginal street; thence by a curve to the left of two degrees through private land and dock westerly of the wharf now or formerly of the Boston & Maine Railroad to a point about two hundred forty-eight feet northeasterly of the Harbor Commissioners' line; thence passes through said dock, crosses the Harbor Commissioners' line and through Boston Harbor in part by a three degree curve and through land known as the Central wharf to a point in said wharf about five hundred three feet easterly of the center line of Atlantic avenue; thence passes through said Central wharf, crosses Atlantic avenue and passes through Central street to a point about four hundred eighty-six feet westerly of the center line of Atlantic avenue; thence by a curve to the left of five degrees forty minutes passes through Central street and crosses India street to a point near the westerly line of said India street; thence passes by a curve of two degrees five minutes through private property to a point near the easterly line of Broad street and crosses Broad street; at this point the location of a passenger and freight terminal station begins and extends through Water street, Liberty square, crosses Kilby street and continuing through Water street terminates in Water street and in Post Office square easterly of a line drawn between the northeasterly corner of Congress and Water streets and the southeasterly corner of Congress and Milk streets.

All curves are flattened at each end where necessary by suitable spirals. The foregoing center line, except where otherwise noted, is on a tangent.

The location of said terminal includes private property adjoining said streets and squares substantially as shown on plan B-2647 to be recorded herewith, and also a footway to and from the Washington street

tunnel as shown on said plan, the connection of such footway with said Washington street tunnel being subject to the consent of the Boston Transit Commission and of the Boston Elevated Railway Company or its assigns.

All of the foregoing is as shown on a series of maps by John H. Bickford, Engineer, numbered C-2575 (a detail of a portion of which is shown on plan numbered B-2647), B-2565, B-2555, B-1975 and B-2495 (a detail of a portion of which last-named plan is shown on plan numbered E-2437).

The grades and elevations of said tunnel shall be substantially as shown on the aforesaid maps and plans.

The location of said tunnel under Boston Harbor is fixed as aforesaid subject to approval by the properly constituted authorities of the United States.

The foregoing motion was unanimously adopted by concurrent action of the Board of Railroad Commissioners and the Boston Transit Commission.

APPENDIX E.

THE COMMONWEALTH OF MASSACHUSETTS.

To the Honorable Senate and the House of Representatives.

Chapter 108 of the Resolves of 1911 read as follows:—

RESOLVE TO PROVIDE FOR AN INVESTIGATION AS TO CERTAIN IMPROVEMENTS OF THE SUBWAY AND TRANSPORTATION SYSTEM IN THE CITY OF BOSTON.

Resolved, That the board of railroad commissioners and the Boston transit commission, sitting jointly, be instructed to consider the matters contained in the following bills and resolve now pending, namely,— house bill, No. 149, house bill, No. 1384, house bill, No. 1385, and resolve, house, No. 1110. The said joint board shall investigate and determine whether it is for the public interest, and expedient, to enact any or all of the legislation prayed for in the petitions accompanying the said bills and resolve; and if the board recommends any legislation it shall submit the draft of an act or acts embodying the same. The said joint board shall report to the next general court on or before the second Saturday in January, and may expend for the purposes of this resolve such sums of money, to be paid out of the treasury of the commonwealth, as may be necessary, and as shall be approved by the governor and council. [Approved June 22, 1911.

Pursuant to this legislative reference the Board of Railroad Commissioners and the Boston Transit Commission, sitting jointly, duly organized, gave hearings, and proceeded in the investigation as directed, and the Joint Board now makes report thereon.

HOUSE BILL No. 149.

House Bill No. 149 may be summarized as follows:—

Section 1 requires the Transit Commission to remove the three structures in Scollay Square and Court Street covering the entrances to and exits from the Tremont Street subway and the East Boston tunnel.

Section 2 authorizes the commission to make other entrances and exits to take the places of those discontinued and, if the existing entrances and exits are continued, limits the dimensions of the coverings thereof. It also provides that the expense of the removal of the present structures and the substitution of new entrances and exits is to be paid by the city.

Section 3 authorizes the commission to enter into contracts and incur indebtedness in the name of the city.

Section 4 contains the usual provision for keeping the streets open for traffic during construction.

Section 5 authorizes the commission to acquire for the city by purchase or otherwise any land or easements or rights therein deemed necessary.

Section 6 contains the usual provision as to awards of damages.

Section 7 is the usual provision as to removal or relocation of tracks, pipes, etc.

Section 8 provides that "the commission may make with the Boston Elevated Railway Company . . . such changes as are necessary in existing contracts or leases between the city and the company in order to give the company the same rights in the new entrances and exits herein provided for as it has in the existing structures."

The remaining sections may provide for issuing bonds, the method of doing the work in case the term of the commission expires, and for the enforcement of the act.

In general it may be said that the purpose of the bill is to provide for the removal of the present entrance and exit structures in Scollay Square and substitute others therefor, or to reduce the size of these structures. Two of these were constructed as part of the Tremont Street subway. The rental for this subway paid to the city by the Boston Elevated Railway Company is a percentage, now $4\frac{1}{2}$ per annum and later to be $4\frac{1}{2}$ upon the cost.

The other structure was built exclusively for use as an exit from the East Boston tunnel and is included in the lease of that tunnel to the company. The cost thereof does not now, but will after the 10th of June, 1922, affect the amount of the rental to be paid by the company.

No change can be made in the structures nor any increase of rental based on the cost thereof without first obtaining the consent of the company.

It is also to be noted that, after the passage of resolve 108, referring this bill to this Joint Board, the Legislature on July 20, 1911, passed an act providing for the construction of the Boylston Street subway, the Dorchester tunnel, and an extension of the East Boston tunnel under Scollay Square and to a point on Cambridge Street. The Transit Commission is at present at work on the plans for this subway, tunnel and extension. As the extension of the tunnel must pass under the Tremont Street subway and the present Scollay Square station, it is apparent that the present entrances and exits should not be discontinued nor substitutes therefor be provided until progress has been made in the plans for the extension of the tunnel sufficient to determine definitely what, if any, changes are necessary therein and what additions or substitutions should be made in order to provide suitably for traffic in the tunnel as extended and the connection of the Scollay Square tunnel station with the present Scollay Square subway station and with the surface.

The expense of discontinuing the present joint entrance to and exit from the Tremont Street subway and the East Boston tunnel in the middle of the square would be very great, as it would render necessary an entire rearrangement of the Scollay Square station by using the central portion where the platforms now are for the tracks, and the portion where the tracks now are for the platforms, and to this would be added the expense of taking for the new entrances and exits private property on each side of the square.

The bill provides that if the present entrances and exits are to be retained the openings shall not exceed certain dimensions specified in the bill. In the opinion of the Joint Board the entrances and exits if limited according to the bill would be inadequate for the proper accommodation of the public.

The Joint Board does not recommend the passage of the bill.

HOUSE BILL No. 1384.

House Bill No. 1384 may be summarized as follows:—

Section 1 requires the Boston Elevated Railway Company to construct an additional elevated station at the junction of Washington and Castle streets.

Section 2 requires the shuttle train now stopping at Beach Street to run to this new elevated station, to be known as Castle Junction.

Section 3 permits the city of Boston to provide money for a suitable westerly approach from the Tremont Street "tunnel" to said Castle Junction station by extending Broadway one block.

Section 4 requires the company to bear a proportionate part of the expenses of such extension.

Section 5 authorizes the city of Boston to discontinue the Cove Street bridge and to use such part of the main structure as is available in extending Atlantic Avenue over and to Broadway.

Section 6 authorizes the city to remove the Cove Street drawbridge and use it for a connection from South Boston over Fort Point channel to the South End, the expense to be met from the regular tax levy. It requires the Boston Elevated Railway Company to remove the Dover Street elevated station to the corner of Washington and East Dedham streets, and the New York, New Haven & Hartford Railroad Company to remove the present South Boston station further south.

Section 7 authorizes the city to take by right of eminent domain and provides for the assessment of betterments.

Section 8 authorizes the city to issue bonds.

Section 9 relates to the powers of the Boston Transit Commission in the premises.

Section 10 provides that 5 per cent. of the cost shall be taken annually from the tax levy and accumulated in the sinking fund of the city of Boston.

This bill requires the Boston Elevated Railway Company to make radical changes in and additions to its system and to expend large sums therefor. The company cannot be compelled by legislation to carry out these requirements. (See Statutes of 1897, chapter 500, section 10, and the contracts for the use of the Washington Street tunnel and the extension thereof.) The existence of a public demand therefor was not shown.

The bill further authorizes the city of Boston to extend Broadway, Atlantic Avenue and Dartmouth Street, to discontinue the Cove Street bridge and to remove the Cove Street drawbridge. So far as known to the Joint Board the city of Boston has not expressed its desire to obtain such authority from the Legislature, nor has it determined that public necessity reasonably requires these changes and the expenditure incidental thereto.

The Joint Board does not recommend the passage of the bill.

HOUSE BILL No. 1385.

House Bill No. 1385 authorizes the city of Boston to take land by right of eminent domain and to pay therefor by novel methods incompletely described, in order that "transportation may be improved . . . upon the main thoroughfares of Dorchester district, Boston," the method to be "known throughout Massachusetts as the Dorchester plan of street widening."

Section 8 provides that the provisions of the bill shall be applied, first, to Norfolk Street Dorchester, and thereafter to other streets in the order named as the demand therefor may be evidenced by public hearings.

On Nov. 13, 1911, the city council of Boston passed an order appropriating \$150,000 for the widening of Norfolk Street.

The following amendment of Article X. of Part I. of the Constitution was on the seventh day of November last ratified and adopted by the people:—

The legislature may by special acts for the purpose of laying out, widening or relocating highways or streets, authorize the taking in fee by the commonwealth, or by a county, city or town, of more land and property than are needed for the actual construction of such highway or street: *provided, however*, that the land and property authorized to be taken are specified in the act and are no more in extent than would be sufficient for suitable building lots on both sides of such highway or street; and after so much of the land or property has been appropriated for such highway or street as is needed therefor, may authorize the sale of the remainder for value with or without suitable restrictions.

This Joint Board does not recommend the passage of this bill which provides for the application to a part of the city of a method of treatment different from that which is generally applicable to all parts of the city.

HOUSE DOCUMENT No. 1110.

House Document No. 1110 is a draft of a resolve accompanying the petition of Charles A. Dean and others. The following is a copy:—

RESOLVE RELATIVE TO THE ENLARGEMENT OF THE PARK STREET SUBWAY STATION IN THE CITY OF BOSTON.

Resolved, That the board of railroad commissioners and the Boston transit commission report as soon as may be a bill to enlarge the Park street subway station in the city of Boston as public convenience may require and in accordance with the studies and suggestions made in the report of said joint board wherein they state that special legislation is needed to make the enlargement of said station that the public convenience imperatively requires.

The following is an extract from the report referred to, being a report on chapter 58 of the Resolves of the year 1910, made by this Joint Board to the Legislature of 1911:—

In this connection the Joint Board, in view of the present congestion in the Park Street station at rush hours, deems it proper to state that existing accommodations can readily be increased to such extent as may be desired by extending the platforms towards the south. This station was originally planned to occupy in width as much space under the Common as was permitted by law, and its length was determined by an estimate of the area required for probable business and by a desire to avoid injury to a line of old elms then supposed to be in good condition, but shortly thereafter discovered to have been so rotted by age that safety required their removal. An enlargement of the station, if desired, can now be executed advantageously in connection with the building of the new station for the Cambridge line. Such enlargement will require special legislative authorization, and the assent of the West End Street Railway Company as lessee and of the Boston Elevated Railway Company as assignee of the lease will also be necessary. It should be borne in mind that the present congestion will in any event be materially relieved when the new subway line to Cambridge is opened, and later when the proposed Riverbank subway to the west is constructed, as each of these subways will have independent platforms, entrances and exits.

The available standing space on the platforms for northbound cars at Park Street is about 7,000 square feet and for the southbound cars about 8,500 square feet.

In the fifth annual report of the Boston Transit Commission for the year ending Aug. 15, 1899, it was estimated that this station was then used by about 27,400,000 passengers per annum. This estimate included those using the platforms in transferring from one car to another. It is estimated that at the present time these platforms are used by between 36,000,000 and 37,000,000 persons per annum.

The total number of passengers in and out of the North Station, according to statistics published last year, was 25,750,000, and at the South Station on the lines of the New York, New Haven & Hartford Railroad, 24,750,000, and on the Boston & Albany line, 7,950,000, making a total at that station of 32,700,000 passengers per annum.

Similar figures in reference to the Grand Central Station in New York give the number of passengers in and out on the New York Central & Hudson River Railroad as 10,261,273, and on the New York, New Haven & Hartford Railroad as 9,806,466, making a total for both lines of 20,067,739 per annum.

A difficulty of the situation experienced at Park Street and not at stations with a train service arises out of the fact that the platforms are served by single cars running to some 30 destinations which arrive at the platform in no regular order. Before the work of construction of the station was begun it was anticipated that some effective and simple means would be required for notifying each passenger when the car he

needed was coming to the platform and exactly where it was going to stop. This was accomplished by means of indicators placed at each end of the platform for southbound cars.

While this platform at the times of greatest traffic is crowded to the point of discomfort, there has been, owing to the use of the indicators and the great care exercised by the company, a remarkable freedom there from serious accidents.

The resolve of the year 1911, under which the present report is made, was approved on the 22d of June.

Subsequently the Legislature passed an act entitled "An Act Relative to Electric Railway Transportation Facilities in the City of Boston and its Vicinity," being chapter 741 of the Acts of 1911, which act was approved on the 20th of July.

By section 1 of said act the Boston Transit Commission, in connection with the construction of the Dorchester tunnel, so called, in extension of the Cambridge connection from its Park Street station, was authorized to —

make such alterations or enlargements of the present Park street station of the Tremont street subway, and of the exits and entrances from and to such station, and of the station now being constructed at or near the junction of Park and Tremont streets for the tunnel of the Cambridge connection, so-called, and of the exits and entrances therefrom and thereto, as the commission may deem necessary or advisable.

In section 5 of said act which requires the Boston Transit Commission to construct the Boylston Street subway, so called, is the following clause: —

Instead of constructing said subway as a continuous line from Arlington street to Park street station, the commission may connect said subway at or near the junction of Boylston street and Tremont street with the tracks of the present Tremont street subway, and between that point and the Park street station may either enlarge the present Tremont street subway so as to provide for two additional tracks, or may construct a separate subway adapted to contain two railway tracks, connecting the same with the present Tremont street subway and the tracks located therein.

Chapter 740 of the Acts of the year 1911 was "An Act to authorize the Consolidation of Properties and Franchises of the Boston Elevated Railway Company and the West End Street Railway Company." Section 16 of said act contains the following provision: —

Changes and alterations may be made in the Tremont street subway so far as may be expedient in connection with the construction of the proposed Boylston street subway.

It is the belief of the Joint Board that these provisions furnish to the Boston Transit Commission sufficient authority for an appropriate enlargement of the Park Street station of the Tremont Street subway, and that they should be availed of to provide more ample accommodations to the end that the comfort and convenience of the passengers may be promoted.

The foregoing report is respectfully submitted.

FREDERICK J. MACLEOD,
GEORGE W. BISHOP,
CLINTON WHITE,

Board of Railroad Commissioners.

GEORGE G. CROCKER, *Chairman,*
GEORGE F. SWAIN,
HORACE G. ALLEN,
JOSIAH QUINCY,
JAMES B. NOYES, *Secretary,*

Boston Transit Commission.

JAN. 11, 1912.

APPENDIX F.

[CHAPTER 27.]

RESOLVE TO PROVIDE FOR A REPORT BY THE BOSTON TRANSIT COMMISSION OF A ROUTE FOR AN EXTENSION OF THE DORCHESTER TUNNEL IN THE CITY OF BOSTON.

Resolved, That the Boston transit commission is hereby authorized and directed, after an appropriation sufficient to cover the expense of the same as estimated by it has been made by the city of Boston, to give public hearings, and to investigate and report to the next general court, on or before the first Saturday in January, a route for an extension of the Dorchester tunnel provided for by chapter seven hundred and forty-one of the acts of the year nineteen hundred and eleven; said tunnel to start at Andrew square and form a continuation of said Dorchester tunnel and to run to such point in the Dorchester district, not nearer the terminus provided in said chapter for said Dorchester tunnel than Codman square in the Dorchester district, as will most conveniently afford access or approach for cars from Neponset, Fields Corner, Milton Lower Mills and Mattapan, so-called, in said district. The commission shall embody in its report an estimate of the cost of constructing the said tunnel. [*Approved March 18, 1912.*]

APPENDIX G.

[CHAPTER 109.]

RESOLVE PROVIDING FOR AN INVESTIGATION OF THE ADVISABILITY AND COST OF CONSTRUCTING A TUNNEL BETWEEN THE CITIES OF BOSTON AND CHELSEA.

Resolved, That the Boston transit commission shall investigate and report to the general court on or before the second Saturday in January, nineteen hundred and thirteen, whether or not in the opinion of said commission it is advisable and for the public interest to provide for the construction and operation of a tunnel connecting the cities of Boston and Chelsea; but the investigation shall not be begun nor the report made unless and until an appropriation sufficient to cover the expense thereof, as estimated by the said commission, shall have been made by the city of Chelsea. The commission shall embody in its report an estimate of the cost of the construction of the proposed tunnel, shall designate the route or routes, and shall state how, in its judgment, the cost of construction should be distributed between the cities and towns benefited by the tunnel. Nothing herein contained shall be held to be a declaration by the general court that public necessity and convenience require the construction of such a tunnel. [*Approved May 20, 1912.*]

APPENDIX H.

INDEX TO ANNUAL REPORTS ONE TO EIGHTEEN, INCLUSIVE.

ABBREVIATIONS: B. T. C., Boston Transit Commission; B. E. R. C., Boston Elevated Railway Company; W. E. S. R., West End Street Railway Company; R. R. Com., Board of Railroad Commissioners; City, City of Boston; Jt. Bd., Joint Board; Subway, Tremont street subway; C. B., Charlestown Bridge; E. B. T., East Boston Tunnel; N. T. (New Tunnel), Washington street tunnel; C. C., Cambridge Connection; R. S., Riverbank subway (East and west tunnel and subway); D. T., Dorchester tunnel; B. S., Boylston Street subway; E. B. T. ex., East Boston tunnel extension; B. & E., Boston and Eastern Electric Railroad Company.

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APPENDIX I.

The names of all the assistants in the Engineering Department who have been employed for more than one month during the last year together with an indication of the work on which they have been engaged, are given below.

Assistant Engineers.

CHARLES H. BARTLETT,	Detail work on steel structures.
BION A. BOWMAN,	Detail work on steel structures.
C. LEONARD BROWN,	Construction, Section 2, Cambridge Connection; Section A, Dorchester Tunnel.
WILBUR W. DAVIS,	In charge of construction, Section 2, Cambridge Connection. Surveys and studies for a part of Boylston-street Subway.
G. DANA EMERSON,	In charge of construction, Section A, Dorchester Tunnel. Studies and designs for part of Dorchester Tunnel under Fort Point Channel.
ROBERT B. FARWELL,	In charge of surveys, studies and estimates of cost, East Boston Tunnel Extension. Specifications, estimates of cost and studies for sewer changes, Boylston-street Subway and Dorchester Tunnel.
JAMES B. FLAWS,	Surveys and plans for Boylston-street Subway. Assisting the engineer in charge of construction, Section 1 of the said subway.
JAMES T. FRAME,	Inspection, Section 2, Cambridge Connection; plans for Boylston-street Subway. Assisting the engineer in charge of construction, Section 3, of the said subway.
LEONARD B. HOWE,	Detail plans, subways and tunnels.
WILLIAM W. LEWIS,	In charge of surveys and plans, Dorchester Tunnel; tests of inclined elevators at Park-street Station.
ROY M. LOTHROP,	Contract and detail plans.
LAURENCE B. MANLEY,	In charge of surveys and plans, Boylston-street Subway. In charge of construction, Sections 1 and 3 of the said subway.
GEORGE F. OWEN,	Plans, Dorchester Tunnel.
BARZILLAI A. RICH,	Designs for structures, Dorchester Tunnel.
ERNEST R. SPRINGER,	Designs for steel and reinforced concrete structures, Dorchester Tunnel and Boylston-street Subway.

- GEORGE H. STEARNS, In charge of designs for steel work and reinforced concrete structures, Cambridge Connection, Boylston-street Subway and Dorchester Tunnel.
- HERBERT R. STEARNS, Designs and plans for Dorchester Tunnel.
- ROBERT K. TAYLOR, Construction, Section 2, Cambridge Connection. Plans and inspection changes in Summer-street station, Washington-street Tunnel, and studies for work under Fort Point Channel.
- PHILIP B. WALKER, In charge of repair work and tests in East Boston Tunnel; inspection of tiling, plastering, etc., Section 2, Cambridge Connection; testing cement, pitch and other materials.
- Draftsmen.*
- CHARLES R. BERRY, Contract plans, Boylston-street Subway.
- CHARLES L. DOHERTY, Plans, Dorchester Tunnel.
- RALPH A. FISHER, Steel plans, Boylston-street Subway and Dorchester Tunnel.
- WALTER AUGUSTINE FORD, Steel plans, Boylston-street Subway and Dorchester Tunnel.
- GEORGE P. GOODMAN, Drafting and photography.
- CLARENCE D. MAYNARD, Studies, East Boston Tunnel Extension and Boylston-street Subway.
- EDMUND A. RICE, Plans for structures.
- CHESTER A. RICHARDSON, Designs for structures and plans for Dorchester Tunnel.
- FREDERIC W. STILES, Drafting, force accounts, Section 1, Boylston-street Subway.
- Transitmen.*
- LEON N. ALBERTS, Plans, Boylston-street Subway; surveys and studies, East Boston Tunnel Extension.
- LESTER S. DANIELS, Plans and line and grade work, Boylston-street Subway.
- HAROLD M. DAVIS, Line and grade work, Section 1, Boylston-street Subway.
- HENRY N. HAYWARD, Pipe plans, Dorchester Tunnel; line and grade work, Section 2, Cambridge Connection and Section A, Dorchester Tunnel.
- * THOMAS R. HAZELUM, Construction, Section 2, Cambridge Connection.
- AUSTIN B. HENDERSON, Plans, Section A, Dorchester Tunnel.
- * LOUIS W. HICKEY, Surveys, Dorchester Tunnel.
- ARTHUR V. LYNCH, Surveys and plans, Dorchester Tunnel.
- SIDNEY S. VON LOESECKE, Line and grade work, Section 2, Cambridge Connection; surveys and plotting, Boylston-street Subway.

Assistants.

JAMES H. O'CONNOR, Force accounts and miscellaneous work,
Section 3, Boylston-street Subway.
CHARLES V. REYNOLDS, Construction, Section 3, Boylston-street
Subway.

Rodmen.

RICHARD A. CASWELL, Plans, Dorchester Tunnel; inspection,
Section 1, Boylston-street Subway.
HENRY L. CROCKER, Surveys and plans, East Boston Tunnel
Extension and Boylston-street Sub-
way.
EDWIN A. DESMOND, Construction, Section 1, Boylston-street
Subway; surveys, Dorchester Tunnel.
Force accounts and inspection of con-
crete mixing, Section 2, Cambridge
Connection.
WILLIAM G. DOHERTY, Line and grade work, Boylston-street
Subway; surveys, Dorchester Tunnel.
WALTER ANTHONY FORD, Surveys, plans, line and grade work,
Boylston-street Subway.
ELIAS S. HANNA, Surveys and plans, Dorchester Tunnel.
JOHN A. HOLBROOK, Line and grade work, Section 2, Cam-
bridge Connection and Section A,
Dorchester Tunnel; surveys, Boyl-
ston-street Subway.
THOMAS H. KEENAN, Construction, Section 2, Cambridge Con-
nection; repairs in Sections B and C,
East Boston Tunnel.
AARON W. KINNE, Construction, Section 2, Cambridge Con-
nection; inspection and line and grade
work, Section 1, Boylston-street Sub-
way.
LAURENCE K. MARSHALL, Surveys, drafting and calculations, Boyl-
ston-street Subway; line and grade
work, Section 1, Boylston-street Sub-
way.
EDWARD E. MURPHY, Line and grade work, Section 1, Boylston-
street Subway.
LAURENCE M. PITMAN, Line and grade work, Section 3, Boylston-
street Subway, studies and calculations,
Boylston-street Subway; surveys and
studies, East Boston Tunnel Extension.
* GEORGE W. PRESBY, Construction and line and grade work,
Section 2, Cambridge Connection.
* JAMES J. TOBIN, Construction, Section 2, Cambridge Con-
nection.

Inspectors.

JOHN P. MCKNIGHT, Section 1, Boylston-street Subway.
ROBERT P. O'KEEFE, Section 2, Cambridge Connection; changes
in Summer-street station, Washington-
street Tunnel; Section 3, Boylston-
street Subway.
ALFRED W. PARKER, Inspector of steel work.

Chemist, Testing Material, etc.

† HAROLD C. DELONG,	Testing cement, pitch and other material. In charge of stockyard, superintending making of concrete sheeting, etc.
WALTER T. WILEY,	Testing cement.

Clerical Force.

ARTHUR B. CARTER,	Secretary to the Chief Engineer.
HARRY E. CASEY,	Stenographer.
ROSE A. MCMAHON,	Stenographer.
JOHN E. RYAN,	Stenographer.
JOSEPH P. SHEERIN,	Clerk.
CHARLES E. FAY,	Messenger in drafting room; blueprint- ing; care of plans.

* Left the employ of the Commission.

† On leave of absence. His place is being filled by Assistant Engineer Walker.

APPENDIX J.

CANYASS OF BIDS FOR 14,000 SQ. FT. 2" x 12" x 12" TERRA COTTA FURRING, DELIVERED AT EITHER 75 CANAL ST. OR ON BOSTON COMMON NEAR PARK ST. JULY 14, 1911.

BIDDER.	Price per sq. ft.	Amount.	Time of delivery.
Waldo Bros, 102 Milk St., Boston.....	\$. 0425	\$595.00	4,000 sq. ft. for immediate delivery; balance in 3 to 4 weeks.
David W. Lewis Co., 24 Milk St., Boston.....	.039	546.00	Delivery in 1 week to 10 days from receipt of order.
Pennsylvania Tile & Construction Co., 161 Devonshire St., Boston.....	.035	490.00	Delivery on or before July 26th.
* National Fireproofing Co., 120 Franklin St., Boston.....	.03125	437.50	Ten days from receipt of order.

* Sample tile measured only 130 sq. inches or about 10% short of being a square foot.
16,000 sq. ft. ordered from Penn. Tile & Construction Co.

APPENDIX K.

CANVASS OF BIDS FOR BORINGS ON LINE OF BOYLSTON-STREET SUBWAY. SEPT. 5, 1911.

BIDDER.	900 FEET OF BORINGS.		120 LIN. FT. CASINGS LEFT IN PLACE FOR OBSERVATION OF GROUND WATER.		Total of Bid.
	Price per ft.	Total.	Price per ft.	Total.	
W. G. Stearns, 55 Myrtle Ave., Jamaica, N. Y.....	\$.80	\$720.00	*\$2.00	\$240.00	\$960.00
B. F. Smith & Co., 38 Oliver St., Boston.....	.65	585.00	.65	78.00	663.00
Eastern Engineering Co., 178 Leyden St., East Boston.....	.44	396.00	.50	60.00	456.00
J. E. Feeley & Co., 43 So. Market St., Boston.....	.40	360.00	.60	72.00	432.00
C. G. Smith Artesian Well Co., 98 High St., Boston.....	.45	405.00	.20	24.00	429.00
Chas. R. Gow Co., 25 Montview St., West Roxbury...	.40	360.00	.35	42.00	402.00

* Not stated in bid. Oral figure.

APPENDIX L.

CANVASS OF BIDS FOR TILING PORTIONS OF WALLS OF PARK-ST. STATION OF BEACON HILL TUNNEL, ETC. SEPTEMBER 26, 1911.

Bidder.	1,800 sq. yds. of plastering more than 4 inch but not exceeding 4 inch in thickness.	(a)	(b)	(c)	110 sq. yds. of colored tile for name signs, borders, etc.	10 name signs.	Total.
Murdock-Reed Co., 127 Federal St., Boston, Mass.	\$1.00 1,800.00	\$1.15 11.50	\$4.43 3,455.40	\$7.56 831.60	\$32.00 320.00		\$6,418.50
Samuel H. Shaw & Co., 110 State St., Boston, Mass.	\$1.10 1,980.00	\$2.00 20.00	\$4.55 3,549.00	\$6.76 743.60			\$6,292.60
The C. M. Tyler Co., 120 Boylston St., Boston, Mass.	\$.72 1,296.00	\$1.35 13.50	\$4.76 3,712.80	\$8.45 929.50			\$5,951.80
Waldo Bros., 102 Milk St., Boston, Mass.	\$.72 1,296.00	\$1.35 13.50	\$4.27 3,330.60	\$6.84 752.40			\$5,392.50
E. Stanley Wires Co., 44 Sudbury St., Boston, Mass.	\$.30 540.00	\$.90 9.00	\$3.60 2,808.00	\$7.65 841.50			\$4,198.50
Coleman Bros., 95 Milk St., Boston, Mass.	\$.30 540.00	\$.60 6.00	\$3.85 3,003.00	\$5.00 550.00			\$4,099.00

APPENDIX M.

CANVASS OF BIDS FOR CASTINGS TO WHICH MASON SAFETY TREAD WAS
TO BE ATTACHED, PARK-STREET STATION OF THE CAMBRIDGE CON-
NECTION. SEPTEMBER 30, 1911.

BIDDER.	Lump price.	Time of Delivery.
Mechanics Iron Foundry Co., 38 Kemble St., Roxbury, Mass...	\$1,450.00	Will deliver in 30 days after receipt of order.
A. B. Robbins Iron Co., Norfolk Downs, Quincy, Mass....	742.00	Delivery to be made in two weeks after re- ceipt of order.
Chelmsford Foundry Co., Medford, Mass.....	660.00	Time of delivery not stated.
G. W. & F. Smith Iron Co., Gerard St., Roxbury, Mass.....	498.00	Complete delivery in three weeks; portion sooner if desired.

APPENDIX N.

CANVASS OF BIDS FOR FURNISHING AND ERECTING FOUR CAST IRON, STRUCTURAL STEEL, GLASS AND COPPER COVERINGS ON TREMONT STREET, OVER STAIRS AND ESCALATORS OF THE PARK-STREET STATION OF THE CAMBRIDGE CONNECTION. OCTOBER 6, 1911.

BIDDER.	Amount.
Hecla Iron Works, 118 North 11th street, Brooklyn, N. Y.	\$9,500.00
Builders Iron & Steel Co., 262 Bridge street, East Cambridge, Mass.	5,445.00

APPENDIX O.

CANVASS OF BIDS FOR FURNISHING AND SETTING IN PLACE IN THE PARK-STREET STATION OF THE TREMONT-STREET SUBWAY 40 TO 50 SQ. YDS. OF 1½' x 4½' x 9" WHITE ENAMELED TILE AND SETTING IN PLACE 40 TO 50 SQ. YDS. OF OLD ENAMELED TILE FURNISHED BY THE COMMISSION. (CEMENT AND SAND TO BE FURNISHED BY THE COMMISSION.) Nov. 2, 1911.

BIDDER.	PRICE PER SQ. YD.		Time of Completion.
	New.	Old.	
The C. M. Tyler Co., 120 Boylston street, Boston, Mass.....	\$12.60	\$5.85	Ten days to 2 weeks from receipt of order.
E. Stanley Wires Co., 9 Park street, Boston, Mass.....	9.30	2.10	Not stated.
Samuel H. Shaw & Co., 110 State street, Boston, Mass.....	8.90	2.07	To be completed within 10 working days.
Coleman Bros., Pearl & Marginal Sts., Chelsea, Mass..	8.50	1.50	To be completed within 2 weeks.

APPENDIX P.

CANVASS OF BIDS FOR CEMENT PLASTERING IN THE PARK-STREET STATION OF THE TUNNEL UNDER BEACON HILL FOR THE CAMBRIDGE CONNECTION; 1540 SQ. YDS., MORE OR LESS, VARYING IN THICKNESS FROM ABOUT $\frac{1}{2}$ " TO ABOUT $1\frac{1}{2}$ ", IN SECTION WITH DOUBLE-BARREL ROOF OF 15.5 FEET RADIUS. NOV. 3, 1911.

BIDDER.	Price per sq. yd.	Total.
Patrick Coffey, 46 Cornhill, Boston.....	\$1.90	\$2,926.00
Morrison & Bowen, 1206 Harrison Ave., Boston.....	1.20	1,848.00
R. C. Williams, 48 Lena Park, Dorchester.....	.95	1,463.00
Stephen T. Keith, 816 Old South Bldg., Boston.....	.94	1,447.60
Muir Brothers, 201 Devonshire St., Boston.....	.65	1,001.00

APPENDIX Q.

CANVASS OF BIDS FOR CEMENT PLASTERING IN THE PARK-STREET STATION OF THE TUNNEL UNDER BEACON HILL FOR THE CAMBRIDGE CONNECTION; 1555 sq. yds., MORE OR LESS, ABOUT $\frac{1}{2}$ " THICK, IN SECTION WITH FLAT ROOF, INCLUDING 450 yds., MORE OR LESS, ON CURVED SURFACE WITH RADIUS OF $2\frac{1}{2}$ FT. AND ALSO INCLUDING STAIRWAY EXITS TO PARK-STREET SUBWAY STATION. NOV. 3, 1911.

BIDDER.	Price per sq. yd.	Total.
Patrick Coffey.....	\$1.90	\$2,954.50
Morrison & Bowen.....	1.10	1,710.50
R. C. Williams.....	.95	1,477.25
Muir Brothers.....	.65	1,010.75
Stephen T. Keith.....	.64	995.20

APPENDIX R.

CANVASS OF BIDS FOR CEMENT PLASTERING IN THE PARK-STREET STATION OF THE TUNNEL UNDER BEACON HILL FOR THE CAMBRIDGE CONNECTION; 635 SQ. YDS., MORE OR LESS, AVERAGING ABOUT 1" THICK, ON ROOF AND WALLS OF TICKET-OFFICE LOBBY, IN STAIRWAY EXITS FROM LOWER PLATFORM TO TICKET-OFFICE LOBBY AND ON WALLS AND ROOF OF SHAFT FOR ESCALATOR SOUTH OF WINTER ST. NOV. 3, 1911.

BIDDER.	Price per sq. yd.	Total.
Patrick Coffey.....	\$1.90	\$1,206.50
Morrison & Bowen.....	1.50	952.50
R. C. Williams.....	.95	603.25
Stephen T. Keith.....	.75	476.25
Muir Brothers.....	.65	412.75

APPENDIX S.

CANVASS OF BIDS FOR CEMENT PLASTERING IN THE PARK-STREET STATION OF THE TUNNEL UNDER BEACON HILL FOR THE CAMBRIDGE CONNECTION; 10 TO 1000 LIN. FT. OF ROUND CORNERS FROM ABOUT $\frac{1}{2}$ " TO 1" RADIUS. Nov. 3, 1911.

BIDDER.	Price per lin. ft.
Patrick Coffey, 46 Cornhill, Boston.....	\$.35* .20†
Stephen T. Keith, 816 Old South Bldg., Boston.....	.25
Muir Brothers, 201 Devonshire St., Boston.....	.15
Morrison & Bowen, 1206 Harrison Ave., Boston.....	.12
R. C. Williams, 48 Lena Park, Dorchester.....	.10

* Round corners.

† Sharp corners.

APPENDIX T.

CANVASS OF BIDS FOR REINFORCED CONCRETE SWITCH TOWER, ETC.,
INCLUDING FURNISHING AND SETTING THE DOORS AND WINDOWS.
NOVEMBER 21, 1911.

BIDDER.	Price.
Hugh Nawn Contracting Co.....	\$3,000.00
Aberthaw Construction Co.....	3,000.00
Coleman Bros.....	2,000.00
John E. Palmer.....	1,800.00

APPENDIX U.

CANVASS OF BIDS FOR FURNISHING AND DELIVERING AT YARD OF THE
BOSTON TRANSIT COMMISSION, 75 CANAL ST., BOSTON, 37 BRASS
MOULDINGS FOR ADVERTISING PANELS FOR PARK-STREET STATION OF
CAMBRIDGE CONNECTION. NOV. 28, 1911.

BIDDER.	Price per frame.	Total.	Time of Delivery.
* Lombard Fire-Proof Co., 404 Atlantic avenue, Boston, Mass. . . .	\$8.78	\$325.00	3 to 4 weeks.
E. B. Badger & Sons Co., 75 Pitts street, Boston, Mass.	5.75	212.75	Not stated.
* T. F. McGann & Sons Co., 104 Portland street, Boston, Mass.	3.78	140.00	3 weeks.
William Hall & Co., 7 Dock square, Boston, Mass.	2.50	92.50	4 weeks.

* Only a lump price was bid.

APPENDIX V.

CANVASS OF BIDS FOR FURNISHING AND INSTALLING COPPER-COVERED DOORS, FRAMES AND APPURTENANCES IN ACCORDANCE WITH PLANS RESPECTIVELY NUMBERED 9973 AND 10044, IN PARK-STREET STATION FOR CAMBRIDGE CONNECTION. JANUARY 18, 1912.

	S. D. Hicks & Son.	E. B. Badger & Sons Co.
<i>Item (1).</i> For furnishing and installing 8, more or less, copper-covered doors and frames, type A, per door.....	\$66.00= \$528.00	\$53.90= \$431.20
<i>Item (2).</i> For furnishing and installing 11, more or less, copper-covered doors and frames, type B, per door.....	63.00= 693.00	55.00= 605.00
<i>Item (3).</i> For furnishing and installing 3, more or less, copper-covered doors and frames, type C, per door.....	84.00= 252.00	65.00= 195.00
<i>Item (4).</i> For furnishing and installing 8, more or less, copper-covered doors and frames, type D, per door.....	57.00= 456.00	49.00= 392.00
<i>Item (5).</i> For furnishing and installing 3, more or less, copper-covered double doors and frames, type E, per door.....	104.00= 312.00	91.00= 273.00
	\$2,241.00	\$1,896.20
Time of Completion.....	4 weeks or less.	Not more than three or four weeks.

APPENDIX W.

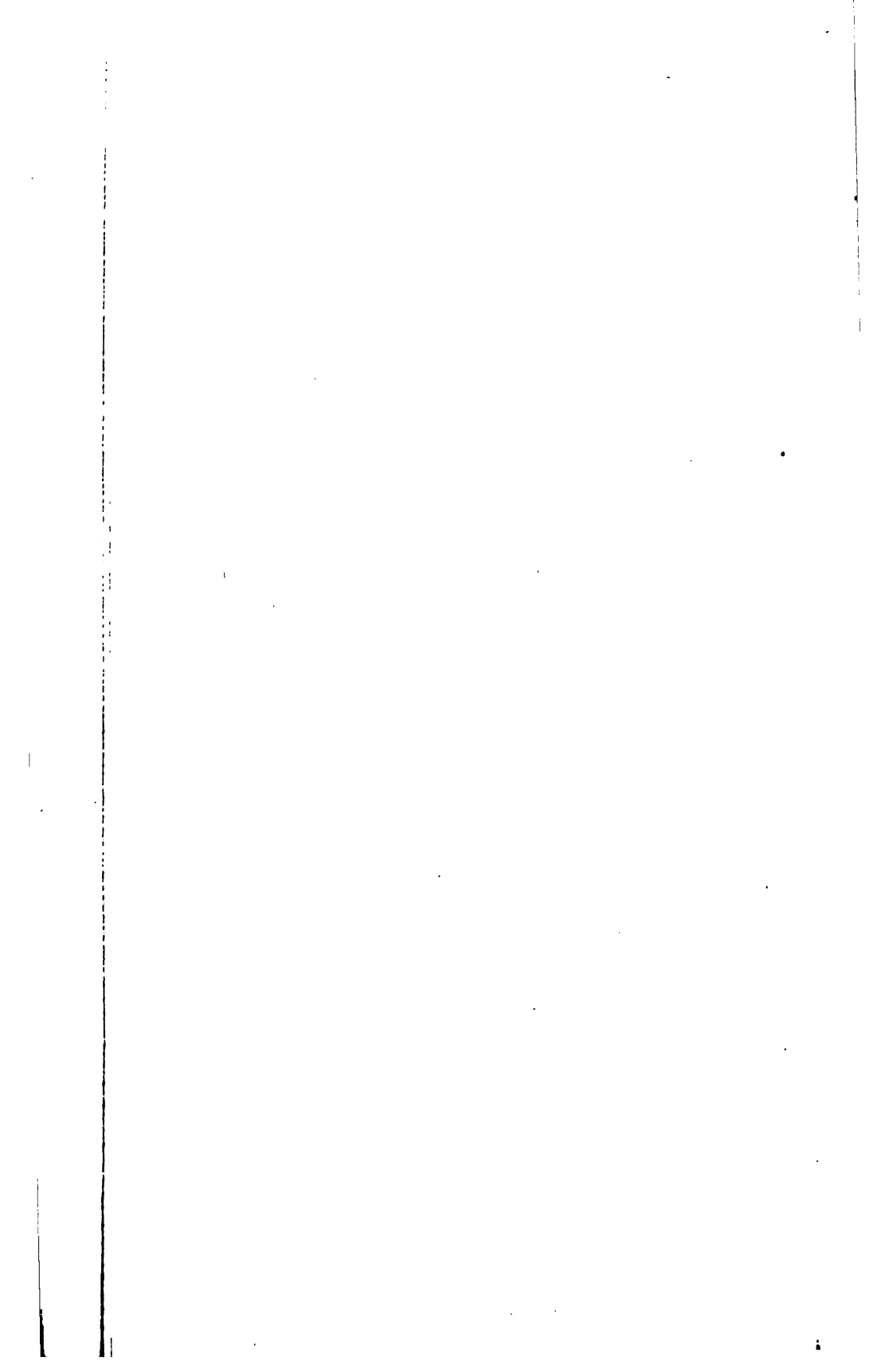
CANVASS OF BIDS FOR SQUARE OPEN-HEARTH COLD-TWISTED STEEL RODS DELIVERED AT 75 CANAL STREET, BOSTON. FEBRUARY 7, 1912.

Bidder.	Items.	Prices per lb.	Totals.	Grand totals.	Time of delivery.
Robert B. Campbell	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	\$0.0165	\$5,940.00	.....	30 days.
	20,000 lbs. $\frac{1}{2}$ "	0.0175	350.00	\$6,290.00	To suit.
F. A. Houdlette & Son	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.014	5,040.00	.....	3 to 4 wks.
	20,000 lbs. $\frac{1}{2}$ "	0.015	300.00	5,340.00	About 2 wks.
Harrington, Robinson & Co	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.014	5,040.00	.....	By March 5th, if ordered before 13th inst.
	20,000 lbs. $\frac{1}{2}$ "	0.015	300.00	5,340.00	As required.
Brown, Wales Co.	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.014	5,040.00	.....	3 to 4 wks.
	20,000 lbs. $\frac{1}{2}$ "	0.015	300.00	5,340.00	2 to 3 wks.
Lackawanna Steel Co.	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.0138	4,968.00	.....	Immediate shipment of the whole or any part.
	20,000 lbs. $\frac{1}{2}$ "	0.0138	276.00	5,244.00	Commence shipping on receipt of order, completing within 2 wks. or earlier.
W. E. Clarke & Co.	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.013625	4,905.00	.....
	20,000 lbs. $\frac{1}{2}$ "	0.014625	292.50	5,197.50	
James W. Sederquist	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.013725	4,941.00	.....
	20,000 lbs. $\frac{1}{2}$ "	0.013725	274.50	5,215.50	
H. W. Hayes & Co.	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.0137	4,932.00	.....
	20,000 lbs. $\frac{1}{2}$ "	0.0137	274.00	5,206.00	
Jones & Laughlin Steel Co.	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.0136	4,896.00	.....
	20,000 lbs. $\frac{1}{2}$ "	0.0136	272.00	5,168.00	
J. F. Kennedy	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.0133	4,788.00	.....
	20,000 lbs. $\frac{1}{2}$ "	0.0143	286.00	5,074.00	
Eastern Expanded Metal Co.	360,000 lbs. 1", $\frac{1}{4}$ " or $\frac{1}{2}$ "	0.0131	4,716.00	.....
	20,000 lbs. $\frac{1}{2}$ "	0.0141	282.00	4,998.00	

APPENDIX X.

CANVASS OF BIDS FOR FURNISHING AND INSTALLING ABOUT 753 LIN. FT.
OAK HANDRAILS, WITH BRACKETS, SOCKETS, POSTS, BOLTS, ETC.,
IN PARK-STREET STATION FOR CAMBRIDGE CONNECTION. FEBRUARY
15, 1912.

BIDDER.	Price bid.	Time of Delivery.
J. B. Hunter & Co., 60 Summer St., Boston, Mass.	\$1,785.00	36 working days from receipt of order.
Isaac McLean Sons Co., 292 Dorchester St., South Boston, Mass.,	1,372.00	One month after walls are ready to receive hand- rails.
A. Dickey & Co., 37 Bristol St., Boston, Mass.	1,350.00	Four to six weeks if the place is ready.



APPENDIX AA.

CANVASS OF BIDS FOR SPECIAL CASTINGS FOR MANHOLES FOR NEW SEWERS
ON ACCOUNT OF DORCHESTER TUNNEL. APRIL 10, 1912.

BIDDER.	15,200 lbs. cast iron.	Extra for patterns.	Miscellaneous fittings.	Total.
Gibby Foundry Company, East Boston, Mass.....	5.6c \$851.20	0.00	\$80.16	\$931.36
Builders Iron Foundry, Providence, R. I.....	3.0c \$456.00	\$110.00	\$217.00	\$783.00

APPENDIX BB.

CANVASS OF BIDS. STEEL AND CAST-IRON FOR SECTION A, DORCHESTER TUNNEL. MAY 2, 1912.						
BIDDER.	390,000 lbs. of structural steel.		1,000 lbs. of cast-iron.		Total.	Time of Delivery.
	Per lb., cents.	Amount.	Per lb., cents.	Amount.		
American Bridge Co., 141 Milk St., Boston	\$0.0235	\$9,165.00	\$0.0285	\$28.50	\$9,193.50	July 31, 1912.
Belmont Iron Works, 22nd St. & Washington Ave., Philadelphia, Pa.....	0.0224	8,736.00	0.03	30.00	8,766.00	June 20, 1912.
Lewis F. Shoemaker & Co., Harrison Bldg., Philadelphia, Pa.....	0.0222	8,658.00	0.0222	22.20	8,680.20	June 15, 1912.
Bethlehem Steel Co., 165 High St., Boston	0.0208	8,112.00	0.025	25.00	8,137.00	June 20, 1912.
New England Structural Co., 110 State St., Boston	0.0203	7,917.00	0.025	25.00	7,942.00	June 20, 1912.

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Lewis F. Shoemaker & Co., Harrison Bldg., Philadelphia, Pa.	0.0222	8,658.00	0.0222	22.20	8,680.20	June 15, 1912.
Bethlehem Steel Co., 165 High St., Boston	0.0208	8,112.00	0.025	25.00	8,137.00	June 20, 1912.
New England Structural Co., 110 State St., Boston	0.0203	7,917.00	0.025	25.00	7,942.00	June 20, 1912.

CA

Art
3

Lac
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12



APPENDIX FF.

CANVASS OF BIDS FOR 600 CAST WALL PLATES, DELIVERED AT 75 CANAL STREET, BOSTON, FOR THE DORCHESTER TUNNEL. JUNE 27, 1912.

BIDDER.	Price per lb., cents.	Amount.	Remarks.
Chelmsford Foundry Co., Medford, Mass.....	2.	\$1,068.00	
Milford Iron Foundry, Milford, Mass.....	2.	1,068.00	
Mechanics Iron Foundry, 38 Kemble St., Boston...	1.35	720.90	
Gibby Foundry Co., Condor St., East Boston..	1.25	667.50	
G. W. & F. Smith Iron Co., Gerard St., Roxbury.....	1.1516	615.00	Delivery to commence at once and be com- pleted in 10 days.



HARVARD UNIVERSITY
SCHOOL OF
LANDSCAPE ARCHITECTURE

PLATE I





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